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MEYER, EDUARD	*M. Rostovtzeff*
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MICHEL, HENRY	*Roger Soltau*
MICHEL, LOUISE	*Sara Small*
MICHELET, JULES	*Lucien Febvre*
MICKIEWICZ, ADAM	*Stanisław Pigoń*
MIDDLE CLASS	*Alfred Meusel*
MIDDLEMAN	*Maurice Dobb*
MIDHAT PASHA	*Albert H. Lybyer*
MIELCZARSKI, ROMUALD	*Marjan Rapacki*
MIEROSLAWSKI, LUDWIK	*Adam Lewak*
MIGNET, FRANÇOIS AUGUSTE MARIE ALEXIS	*Henry E. Bourne*
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ANCIENT AND MEDIAEVAL	*Louis Halphen*
MODERN	*Imre Ferenczi*
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MILITARY DESERTION	*Paul Schmitthenner*
MILITARY GOVERNMENT	*See* WARFARE
MILITARY LAW	*Thurman Arnold*
	C. E. Brand
MILITARY OCCUPATION	*Pitman B. Potter*
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MILITARY TRAINING	*Elbridge Colby*
MILITIA—CONTINENTAL	*Paul Schmitthenner*
ANGLO-AMERICAN	*Elbridge Colby*
MILK SUPPLY	*Edmund E. Vial*
MILL, JAMES	*Élie Halévy*
MILL, JOHN STUART	*Walton H. Hamilton*
MILLES, THOMAS	*Edwin R. A. Seligman*
MILLING INDUSTRY	*C. B. Kuhlmann*
MILNER, VISCOUNT ALFRED	*Leland H. Jenks*
MILOVANOVIĆ, MILOVAN	*Miloš Bogičevič*
MILTON, JOHN	*S. B. Liljegren*
MILUTIN, NIKOLAI ALEXEYEVICH	*A. A. Kiesewetter*
MINIMUM WAGE	*E. M. Burns*
MINING—HISTORY, TECHNOLOGY AND ECONOMICS	*H. O. Rogers*
	F. G. Tryon
LABOR	*Isador Lubin*
MINING ACCIDENTS	*Royal Meeker*
MINING LAW	*Rudolf Isay*
MINISTERIAL RESPONSIBILITY	*See* CABINET GOVERNMENT
MINORITIES, NATIONAL	*Max Hildebert Boehm*
MINORITY REPRESENTATION	*See* MINORITY RIGHTS; PROPORTIONAL REPRESENTATION
MINORITY RIGHTS	*Ladislas Konopczyński*
MIQUEL, JOHANNES VON	*Hans Herzfeld*
MIR	*See* VILLAGE COMMUNITY
MIRABEAU, COMTE DE	*Philippe Sagnac*
MIRABEAU, MARQUIS DE	*Philippe Sagnac*
MIRANDA, FRANCISCO DE	*William Spence Robertson*
MISCEGENATION	*Philip Wittenberg*
MISKAWAYHI, ABŪ 'ALI AḤMAD	*David S. Margoliouth*
MISSELDEN, EDWARD	*E. A. J. Johnson*
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MITCHELL, JOHN THOMAS WHITEHEAD	*P. Redfern*
MITCHELL, WILLIAM	*Orrin K. McMurray*
MITRE, BARTOLOMÉ	*Roberto F. Giusti*
MITSUI	*John E. Orchard*
MITTEIS, LUDWIG	*Leopold Wenger*
MITTELEUROPA	*See* PAN-MOVEMENTS
MITTEN, THOMAS EUGENE	*E. Orth Malott*
MITTERMAIER, KARL JOSEPH ANTON	*Erich Schwinge*
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MOBILIZATION, INDUSTRIAL	*See* MOBILIZATION AND DEMOBILIZATION
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MODRZEWSKI, ANDRZEJ FRYCZ	*Władysław Maliniak*
MOELLER VAN DEN BRUCK, ARTHUR	*Max Hildebert Boehm*
MOHAMMED	*Joseph Schacht*
MOHAMMED II	*Franz Babinger*
MOHAMMED 'ABDU	*Hans Kohn*
MOHAMMED AḤMAD IBN SAIYID 'ABDALLAH	*E. L. Dietrich*
MOHAMMED 'ALI	*See* MEHEMET ALI

MOHAMMED 'ALI — *Hans Kohn*
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MOHEAU — *René Gonnard*
MOHL, ROBERT VON — *Ernst von Hippel*
MÖHLER, JOHANN ADAM — *Wolfram von den Steinen*
MOLESWORTH, SIR WILLIAM — *C. W. Everett*
MOLINAEUS, CAROLUS — *See* DUMOULIN, CHARLES
MOLINARI, GUSTAVE DE — *Roger Picard*
MOMMSEN, THEODOR — *Wilhelm Weber*
MONARCHOMACHS — *Harold J. Laski*
MONARCHY — *Carl Joachim Friedrich*
— *Frederick Mundell Watkins*
— *H. B. Workman*
— *Robert S. Smith*
MONASTICISM — *See* MELCHETT, LORD
MONCADA, SANCHO DE — *See* MONETARY UNIONS; MONETARY STABILIZATION
MOND, SIR ALFRED — *Frank D. Graham*
MONETARY CONFERENCES — *Axel Nielsen*
— *T. E. Gregory*
MONETARY STABILIZATION — *Marcus Nadler*
MONETARY UNIONS — *See* DRIVES, MONEY RAISING
MONEY — *Louis Halphen*
MONEY MARKET — *See* MARRIAGE
MONEY RAISING DRIVES — *See* BIMETALLISM AND MONOMETALLISM
MONOD, GABRIEL JACQUES JEAN — *Herbert Gross*
MONOGAMY — *John Maurice Clark*
MONOMETALLISM — *See* RELIGION
MONOPOLIES, PUBLIC — *Dexter Perkins*
MONOPOLY — *Dexter Perkins*
MONOTHEISM — *R. D. Richards*
MONROE DOCTRINE — *B. Groethuysen*
MONROE, JAMES — *Georges Goyau*
MONTAGU, CHARLES — *A. E. Monroe*
MONTAIGNE, MICHEL DE — *Paul Harsin*
MONTALEMBERT, COMTE DE — *Paul Goodman*
MONTANARI, GEMINIANO — *Benvenuto Griziotti*
MONTCHRÉTIEN, ANTOINE DE — *Peter Richard Rohden*
MONTEFIORE, SIR MOSES — *E. F. Jacob*
MONTEMARTINI, GIOVANNI — *See* PAWNBROKING
MONTESQUIEU, BARON DE LA BRÈDE ET DE — *John R. Swanton*
MONTFORT, SIMON DE — *Harold D. Lasswell*
MONTS DE PIÉTÉ — *Fidelino de Figueiredo*
MOONEY, JAMES — *Horace M. Kallen*
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MACHINERY, INDUSTRIAL. The machinery industries as a whole comprise the manufacture of all contrivances, implements and apparatus, including accessories, which operate mechanically when driven by animal, human or motor power. The perpetual problem of these industries is the creation of mechanical equipment whose production and subsequent operating and maintenance costs shall be as low as possible, imposing a twofold application of the economic principle of maximum efficiency. Accordingly the machinery industries affect every other industry not only as purveyors of production equipment but above all in the organization and construction of plants. Industry (including agriculture, transport and communication) is dependent upon the machinery industries and the increasing efficiency of their products and of modern machine technology. Thus these industries alongside the production of raw materials occupy a position of pivotal and universal importance in the economic life of the present age. Upon the machinery industries moreover depends national economic power. Their direct economic importance is also great; in the United States in 1929 the output of the machinery industries (including electrical machinery but exclusive of locomotives and other transport equipment) amounted to $6,964,000,000, one tenth of the total industrial output, and employed 1,093,485 wage earners, one eighth of all wage earners engaged in manufacturing.

Despite their essential unity the machinery industries are characterized by a great diversity of output. This is true not only of the different divisions but also of single establishments, which frequently manufacture a variety of products. The machinery industries may be grouped into five major divisions—agricultural machinery (*q. v.*), electrical manufacturing industry (*q.v.*), industrial machinery, locomotives and office and household appliances. There is some overlapping; thus household appliances constitute a considerable part of the output of electrical manufacturing. While these divisions are pertinent, there is no recognized international classification of machinery; in particular the term industrial machinery is in use only in the United States. Industrial machinery includes all machines and accessory equipment used directly in industry (in the production of either consumers' or producers' goods) with the exception of electrical machinery, which has long since become an independent industry but is itself an important market for industrial machinery. It embraces prime movers, including all types of engines; metal working machinery and machine tools, including milling and bending machines, lathes, drills and presses; textile machinery; woodworking machinery, including cutters and planers; auxiliary machinery, including pumps, compressors, blowers and refrigerating apparatus; hoisting equipment, including cranes, derricks and elevators; dredging, excavating, road making and building construction machinery; baking, shoe, laundry and paper and printing machinery; mining and oil well machinery and machinery for smelter, steel and rolling mills as well as apparatus for use in the chemical industries.

In the United States in 1929 the value of output in the machinery industries amounted to $6,964,000,000 divided as follows: industrial, $3,917,000,000; electrical, $2,273,000,000; agricultural, $278,000,000; household and office, $494,000,000. Since the World War the output of household and office machines has increased much more rapidly than that of agricultural machinery. These two divisions play a more important part, in both production and export, in the American machinery industries than in those of other major producing countries. Industrial machinery constitutes the largest group, particularly in other countries, where the output of agricultural, electrical and business machines is absolutely and relatively much smaller than in the United States.

As the term industrial machinery is used only in American literature, and as the various types of machinery are so classified in the statistics of different countries as to render difficult an adequate distinction between industrial and other machinery, international comparison of production, employment and foreign trade can be only approximate, including other than industrial

machinery. Comparative figures on this basis yield a different picture of the distribution of world machinery production and exports from that which would be presented by corresponding figures limited to industrial machinery. The German statistical classification, however, which excludes electrical machinery and boilers but includes locomotives, agricultural machinery and household and office appliances, may be taken, for international comparative purposes, as roughly equivalent to industrial machinery.

Domination of modern economic life by the machine, one manifestation of which is the tremendous variety of machines and of industries producing them, is of comparatively recent date. The modern machinery industries arose after the perfection of the steam engine in 1781 by James Watt, who succeeded in combining the steam piston with a crank mechanism, transforming reciprocating into rotary motion. The steam engine became a prime mover that could be employed anywhere, rendering the operation of machinery independent of manual effort and of natural forces bound by time and place. It was both preceded and followed by other British inventions which were indispensable in the development of machinery. The use of coke in blast furnaces improved the smelting process and yielded a better and cheaper cast iron, the indispensable material in the production of the newer types of machinery. Improvements in machine tools together with steam engine drive made possible more efficient metal working, an indispensable prerequisite in the construction of modern machinery. Metal working was further improved by the introduction of steam hammers, hydraulic presses and mechanical rolling mills. Iron and steam became the basis of the development of machinery and of the industrial revolution. The first important application of the new machine technology was in the English textile industry. In 1779 Crompton invented the spinning mule and made possible automatic mechanical spinning. Mechanical weaving, developed by Horrocks, followed in 1803; improvements were added by Roberts in 1822 and many other textile machines soon followed. The introduction of machinery into other branches of manufacturing was slower but equally steady.

The revolution in machinery was accompanied by a revolution in the methods of constructing machines. Older types of machines, composed mainly of wood, were constructed by handicraft labor. The new machines, composed of iron and other metals, necessitated the development and construction of a whole series of other machines for their production. This necessity made increasingly large technical and economic demands upon the industry, particularly as machines grew in size and complexity. The progress of the machinery industries is bound up with the engineering and economic problems involved in the construction of machinery for the production of machines.

At the beginning of the nineteenth century Great Britain was the undisputed leader in the production of machinery. It endeavored to retain this position by all possible means, including prohibition of the export of machinery (particularly textile machinery), tools, models and plans and of the emigration of engineers and skilled workmen; a series of such prohibitory laws initiated in 1774 were not finally repealed until 1845. The prohibitions were ineffectual in preventing the dissemination of British inventions. The United States, less affected by the flood of British goods because of its remoteness from Europe and hence forced to rely upon the development of its own industry, soon adopted Great Britain's technological advances and improved upon them. The huge domestic market in the continually growing territory of the United States took the place of Great Britain's export markets and promoted the construction of many types of machinery, particularly after the adoption of the 1828 tariff. Despite its own early contributions, for example, the invention of the steamboat, the United States depended upon technical borrowing from Europe in the development of its machinery industries. In the numerous small shops of New England there grew up a considerable manufacture of industrial machinery, especially textile and woodworking machines. By 1840 locomotives were being extensively constructed. While American manufacturers borrowed on a large scale they made considerable improvements in the models they adopted, particularly in interchangeable and automatic mechanism for metal working machines, which gradually surpassed the European.

Germany, France and Belgium also followed Great Britain along the path of industrialization. In Germany, which later became the chief competitor of the British and American machinery industries, the Napoleonic wars and the temporary exclusion of British competition during the continental blockade aided technical development, but after the lifting of the blockade British industry proved its superiority by the flood of goods which it poured into Germany. Germany's

technological progress was also retarded by the political dismemberment of the country, which blocked communication and free access to markets. The abolition of the Prussian internal duties in 1818 and the formation of the German Zollverein in 1834 enormously facilitated the growth of commerce and industry. Germany, however, had early adopted the British models of the new machine technology in various fields of production (the first German steam engine was built in 1785) and developed new types of machines, such as the first mechanical printing press (invented in 1810).

The new machine technology was given a tremendous impetus by developments in transportation. Stephenson built the first practicable steam locomotive in Great Britain in 1829, and shortly afterward the first railroad was opened. The United States followed immediately, independently of Great Britain; Germany did not begin its first railroad until 1835. The construction of locomotives and railroads made the greatest demands upon the machinery industries and was of the utmost importance in their technical and economic growth. The extremely rapid and intensive development of transportation accelerated the process of industrialization begun with the invention of the steam engine and introduced a new epoch of economic growth in all branches of industry and trade, with the machinery industries supplying the necessary technical equipment. Great Britain and the United States still led in machine construction. In 1845 only 15 percent of the locomotives used in Germany were built at home; most of them were imported from Great Britain, while the remainder came from Belgium and the United States. Even in 1857 only 57 percent of Germany's locomotives were of domestic origin, 30 percent coming from Great Britain and 13 percent from the United States and Belgium.

The objective conditions for the development of the modern capitalist system were created by the great inventions in machine technology, particularly efficient prime movers, by the improvement in the production and utilization of iron, by the progressive mechanization of production processes and, finally, by the liberation of hitherto unknown transportation facilities on land and sea. These developments were bound up with the lowering of production costs by the use of continually improved production methods, the consequent decline in commodity prices and the increase in sales, the growth in real income, the opening of new markets, the growing competition in all the fields of production and the rapid rise of population, which combined to insure an almost uninterrupted progress of industrialization. This trend was not confined to industrial activity. In the United States the extremely low density of population led at a very early date to the employment of machinery in agriculture. In Great Britain the country's large capital resources and the existence of great landed estates encouraged the use of agricultural machinery, while the availability of a large and cheap labor supply temporarily kept the machine out of agriculture in Germany, France and other continental countries. Because of its exceptional geographical conditions the United States took the lead in the manufacture and use of agricultural machinery; it still dominates in this field.

It is impossible to describe here the technological evolution of the many kinds of industrial machinery in use today (*see* MACHINES AND TOOLS). It was the result of increased competition among the chief producing countries and of their need for special machinery adapted to the requirements of each country as well as of the general trend toward industrialization. Thus the first sewing machines were invented in the United States together with special woodworking machinery, machinery for the manufacture of shoes and leather and the first typewriters. American machine tools were developed to a high stage of perfection, surpassing those of Great Britain and Germany, with the introduction of series manufacture (and later of mass production) in the manufacture of machinery. Modern methods of manufacture, division of labor, specialization and standardization led to the construction of special precision machine tools in the United States. By 1867 American machines were noted for their originality, although British types were still standard and Great Britain maintained its lead in the manufacture of heavy engineering machinery and of machine tools for shipbuilding. The design and construction of machinery were revolutionized by new processes of steel manufacture originated in Great Britain and Germany. New types of prime movers arose in the years 1865 to 1900 to compete with the steam engine, leading to new technological advances—the electric dynamo, which paved the way for the modern electric motor, the gas engine, the gasoline engine and the Diesel oil engine. Electric drive for all types of machinery characterized the new developments in machine construction, resulting in a rapid electrification of industry.

These and other advances in machine technology arose out of the needs of industry, agriculture and transportation; the former in turn reacted upon the latter, aiding their development. Within the space of a hundred years there was an unparalleled economic growth in the three leading industrial countries, interrupted only by recurring periods of cyclical depression. The territory of the United States spread from the Atlantic to the Pacific forming a vast internal market. The Civil War had an extraordinary influence on the machinery industries because of its huge war requirements and the political stimulus which it gave to the development of industrial capitalism. Within a few years one industry after another was mechanized and new industries were called into being. The complete mechanization of the manufacture of boots and shoes was symptomatic of the general trend. Iron and steel production increased enormously in response to the increasing demand for machines and other metal products, while improved metallurgical methods made necessary more and newer types of machines. The development of electricity called for new types of machines and a whole new industry to produce them. One important aspect of American machine production was the emphasis upon standardized and interchangeable parts. By 1913 the United States led the world in the quantity and quality of its machines, its output of industrial machinery alone amounting approximately to 50 percent of the world output (Table 1).

American machinery exports, negligible before the Civil War, began by 1875 to loom as a competitor in the European market. Penetration of the far eastern market began with the completion of the first transcontinental railroad in 1869. American exports consisted mainly of machines and tools manufactured on a mass production basis and specially adapted to the needs of other countries, such as agricultural machinery, machine tools, firearms, sewing machines, locomotives, stationary engines and sugar mills (the latter went particularly to Cuba, where sugar production was coming under the domination of American interests). The United States, however, was a comparatively unimportant exporter. Great Britain, on the contrary, expanded its export trade enormously on the basis of its technological leadership in machine construction and consolidated its historical position as an importer of raw materials and an exporter of manufactured goods. Germany's eco-

TABLE I

OUTPUT OF MACHINERY, 1913–25*

COUNTRY	VALUE OF OUTPUT					WORKERS EMPLOYED			
	1913		1925			1913		1925	
	AT CURRENT PRICES (IN $1,000,000)	PERCENTAGE	AT CURRENT PRICES (IN $1,000,000)	AT 1913 PRICES (IN $1,000,000)	PERCENTAGE	NUMBER (IN THOUSANDS)	PERCENTAGE	NUMBER (IN THOUSANDS)	PERCENTAGE
United States	1612	50.0	3021	2015	57.6	620	32.8	582	28.3
United Kingdom	381	11.8	715	478	13.6	330	17.4	500	24.4
Germany	666	20.6	697	460	13.1	460	24.3	452	22.0
France	63	1.9	123	82	2.4	45	2.4	85	4.1
Russia	113	3.5	96	64	1.8	130	6.9	98	4.8
Austria-Hungary†	109	3.4	79‡	53	1.5	80	4.2	66	3.2
Switzerland	36	1.1	67	45	1.3	42	2.2	45	2.2
Italy	42	1.3	61	41	1.2	30	1.6	35	1.7
Sweden	29	0.9	40	27	0.8	25	1.3	20	1.0
Belgium	37	1.1	38	26	0.7	24	1.3	25	1.2
Other European countries	32	1.1	57	38	1.1	30	1.6	40	1.9
Canada	76	2.4	169	112	3.2	40	2.1	40	1.9
Japan	11	0.3	51	34	1.0	20	1.1	47	2.3
Oceania	18	0.6	36	24	0.7	15	0.8	20	1.0
World total	3225	100.0	5250	3499	100.0	1891	100.0	2055	100.0

* The table excludes electrical machinery and boilers.
† Data for 1925 cover Austria, Hungary and Czechoslovakia.
‡ Includes $26,000,000 for Austria, $14,000,000 for Hungary and $39,000,000 for Czechoslovakia.
Source: International Economic Conference, *Mechanical Engineering*, League of Nations, Publications, 1927. II. 6, 2 vols. (Geneva 1927) vol. i, p. 30, 33.

nomic growth was comparatively slow until after the achievement of national unity in 1871, but its subsequent rapidity compensated for the late beginnings. In 1868 for the first time the German foreign trade in machinery showed a favorable balance and thereafter, with the exception of the period from 1873 to 1875, the balance continued to be favorable.

The American, British and German machinery industries differed considerably in their technological and economic development. In the United States and Great Britain factories early began to specialize in the production of particular types of machines, for which there was an assured demand either in the large American domestic market or in the export trade of Great Britain and its colonies overseas; consequently competition in these countries between similar machinery products was not very keen. In Germany, however, a large number of manufacturers of machinery not only felt the pressure of foreign competition but had to share a comparatively limited domestic market; hence most of them were compelled to adopt an inclusive program of manufacture covering a wide variety of machine products. The consequent keen competition led to underbidding and the necessity of accepting high priced special orders. But it also acted as a powerful stimulus to technical progress and the improvement of machinery. In the United States and Great Britain concentration on specialized products made possible mass production yielding lower costs and higher profits. Only during the second half of the nineteenth century (as a serious competitor only after 1900) did the German machinery industries enter the world market to obtain new outlets. Germany concentrated on theoretical research and the scientific design of machinery, while British machine construction and for a long time the American as well were guided largely by empirical knowledge. Engineering education and the training of skilled workers were first extensively developed in Germany and constituted an important factor in the growth of its machinery industries. One of the reasons for the final superiority of Germany and the United States over Great Britain in machinery construction at the beginning of the present century was the backwardness of Great Britain in technical science and factory organization and management.

Increasing industrialization in economically backward countries as well as the demand for special types of machinery in the more industrialized countries led to a great increase in the foreign trade in machinery. In 1890 Great Britain was the major exporter, followed by the United States and Germany (Table II); the last

TABLE II

VALUE OF EXPORTS OF MACHINERY, 1913–29

Country	1913		1925			1929		
	At Current Prices (in $1,000,000)	Per-cent-age	At Current Prices (in $1,000,000)	1913 Prices (in $1,000,000)	Per-cent-age	At Current Prices (in $1,000,000)	1913 Prices (in $1,000,000)	Per-cent-age
United States	162	26.8	305	203	34.8	481	351	35.7
Germany	176	29.0	175	117	20.0	340	248	25.2
United Kingdom	172	28.4	214	143	24.4	264	193	19.6
France	18	3.0	40	27	4.6	68	50	5.1
Austria-Hungary*	7	1.1	23	15	2.7	33	24	2.4
Italy	4	0.7	6	4	0.7	10	7	0.7
Belgium	15	2.5	14	9	1.6	20	15	1.5
Switzerland	15	2.5	30	20	3.4	40	29	2.9
Sweden	12	1.9	21	14	2.4	28	21	2.1
Other European countries	13	2.3	24	16	2.8	35	26	2.6
Canada	9	1.5	18	12	2.1	23	17	1.7
Japan	1	0.2	3	2	0.3	5	4	0.4
Oceania	1	0.1	1	—	0.2	1	—	—
World total	605	100.0	874	582	100.0	1348	985	100.0

* Exclusive of electrical machinery and boilers.
† Data for 1925 cover Austria, Hungary and Czechoslovakia.
Source: The figures for 1913 and 1925 are from International Economic Conference, *Mechanical Engineering*, League of Nations, Publications, 1927. II. 6, 2 vols. (Geneva 1927) vol. i, p. 46. The figures for 1929 are compiled by author from official sources; the "1913 prices" are obtained by using as a divisor 137, the 1929 value for the index compiled by the British Board of Trade.

named imported half as much machinery as it exported and Great Britain about one sixteenth, while the American imports were negligible, a noteworthy result of technical and price superiority. For the five years from 1901 to 1905 exports by the United States of machinery of all types averaged $77,950,000 yearly. But while the United States was cutting down Great Britain's lead, Germany cut down the lead of both, overtaking first the United States and then Great Britain and becoming the leader in the world machinery market. In 1913 Germany led the world with 29 percent of total world exports of industrial machinery, while Great Britain followed with 28 percent and the United States with 27 percent. The three chief producing countries increased their total share of such machinery exports from 79 percent in 1890 to 84 percent in 1913. But their competitors also considerably increased their exports and new competitors arose in Sweden, Switzerland, Canada and Holland. Great Britain, the pioneer of the machinery industries, reached in 1907 the peak of its machinery exports, which thereafter remained relatively stationary, while the exports of the United States and Germany rose uninterruptedly except in 1909, a year of general cyclical crisis. In the years immediately preceding the World War Germany not only took the lead in exports but imported fewer machines than Great Britain.

While the three major producing countries exported an approximately equal volume of machinery, the relation of these exports to total national production varied considerably; in 1913 Great Britain exported 45 percent of its machinery production, Germany 26 percent and the United States only 10 percent. Of the total world output of machinery the United States produced 50 percent, Germany 20 percent and Great Britain only 12 percent (Table 1), a complete shift since the earlier years of the nineteenth century. Productive efficiency also varied considerably. In 1913 there were employed in the world's machinery industries 1,900,000 workers, 33 percent of whom were in the United States, 24 percent in Germany and 17 percent in Great Britain; annual output per worker amounted to $2750 in the United States, $1525 in Germany and $1210 in Great Britain. The American lead in both output and efficiency was an expression of the intensive mechanization of industry and the increasing adoption of mass production and specialization.

Other countries were of minor importance in the production of machinery. There was an appreciable output only in Russia, Austria-Hungary, Canada, France, Italy, Switzerland, Belgium and Sweden. The chief manufactures of the minor producing countries were the usual types of prime movers and machine tools and the simplest kinds of industrial machinery. A high degree of efficiency prevailed only in a few special branches, such as agricultural machinery in Canada and France, special textile machinery in Switzerland, locomotives and mining machinery in Belgium and dairy machinery and ball bearings in Sweden. The output of all the minor producing countries combined amounted to only 18 percent of the world's production of machinery in 1913, but they employed 26 percent of the wage earners engaged in the world's machinery industries. An extremely large proportion, about 50 percent, of the wage earners employed in the machinery industries are highly skilled. In 1913 approximately 2,300,000 persons were engaged in the machinery industries; of these 82 percent were wage earners and 18 percent clerical, technical, supervisory and executive employees.

Industrial machinery constituted the overwhelming bulk of the output of the machinery industries in the earlier stages of their development. After 1875, however, electrical machinery constituted an increasingly large proportion of the output of machines, particularly in the United States and Germany, until it became almost as important as industrial machinery. The output of household and office machines also increased steadily, the largest growth being in the United States.

As a result of the World War the relative importance of the different machinery producing countries changed considerably. The enormous demand for war materials in all the belligerent countries led to the erection of numerous new machinery plants. Moreover the war resulted in a pronounced decrease of machinery exports; Germany was practically excluded from the world market, while American and British exports also declined sharply. In consequence the newer industrial countries, such as Japan, Canada, Australia, British India and others, began to provide for their needs by developing their own machinery industries as well as industries producing consumers' goods, thus attempting to become independent of the necessity of importing manufactured goods. These developments must ultimately bring about a reduction in the machinery sales of the older industrial countries, both in

export markets and to their own manufacturing industries.

Recent international comparative data covering machinery construction are available only for 1925. But since then the relative ranking of the several nations has changed but little; only the ratio of production to capacity fluctuated considerably. From 1913 to 1925 the world production of machinery, excluding electrical and some other types of machines, rose about 10 percent—from $3,225,000,000 to $3,500,000,000 in pre-war prices (or $5,250,000,000 in current prices). This, however, assumes a 1925 price level of 150; a decline would be shown by the use of a higher price level as suggested by some authorities. Output rose considerably after 1925; if electrical and all other types of machines are included, the world's output of machinery in 1929 exceeded $10,000,000,000. The world's production capacity, however, rose 45 percent during the same period, assuming that in 1913 production equaled capacity. This 45 percent rise in capacity, accompanied by an increase of only 10 percent in production, necessarily resulted in sharply intensified international competition. The United States and Great Britain both increased their production 25 percent, while Germany's production in 1925 attained only 70 percent of its 1913 value. The share of the United States in world production rose from 50 to 58 percent and of Great Britain from 12 to 14 percent, while Germany's dropped from 21 to 13 percent. An analogous development characterized the production capacity of these countries. The American capacity rose 67 percent and the British 44 percent, while the increase for Germany and the other producing countries was only 20 percent. In percentages the world's production capacity in 1925 as contrasted with that in 1913 was distributed as follows: United States, 57 and 50; Great Britain, 12 and 12; Germany 17 and 20.4; all the other producing countries, 14 and 17.6. In 1925 only 75 percent of capacity was utilized in the United States, 87 percent in Great Britain, 58 percent in Germany and 80 percent in all the other producing countries combined. In 1925 the United States continued to export 10 percent of its total production, while Great Britain's exports dropped to 30 percent as compared with 45 percent in 1913 and Germany's remained constant at 25 percent. The changed situation after the war and the trend toward the increased production of machinery industries by countries other than the three major producers are reflected in the rise of 50 percent in machinery production in Canada, 39 percent in France, 25 percent in Switzerland, 200 percent in Japan and 35 percent in Australia.

Of the three major producing countries the United States made the greatest progress in capacity and production combined. The output of all types of machinery rose from $1,582,000,000 in 1914 to $4,727,000,000 in 1923 and to $6,964,000,000 in 1929. The output of industrial machinery rose from $978,064,000 in 1914 to $3,917,782,000 in 1929, of electric machinery from $335,170,000 to $2,273,000,000, of agricultural machinery from $164,087,000 to $278,539,000 and of all other types from $105,087,000 to $494,956,000, electrical machinery scoring the largest relative increase. The growth in the American industrial machinery industry is shown in Table III.

TABLE III

GROWTH OF AMERICAN INDUSTRIAL MACHINERY INDUSTRY, 1914–29

CENSUS YEAR	NUMBER OF ESTABLISHMENTS	NUMBER OF WAGE EARNERS	VALUE OF OUTPUT	TOTAL WAGES
			IN $1000	
1914	11,392	405,422	978,064	274,432
1919	12,483	666,979	3,200,184	856,442
1923	9,848	586,994	3,009,118	834,416
1925	9,445	537,080*	2,998,260*	790,489
1927	9,653	544,289	3,103,162	810,574
1929	10,476	648,229	3,917,782	992,678

* These figures for 1925 do not correspond with the figures in Table I because of differences in classifications.

Source: Compiled from United States, Bureau of the Census, *Biennial Census of Manufactures 1921–27* (1924–30), and *Census of Manufactures, 1929: Summary by Industries* (1930).

The following statistics for 1929 yield an indication of the output and relative importance of the major categories of American industrial machinery: engines, $460,003,000; machine tools, $184,208,000; pumps and pumping equipment, $153,347,000; textile machinery, $115,525,000; oil well machinery, $89,067,000; refrigerating and ice making machinery, $65,757,000; dredging and excavating machinery, $60,745,000; cranes, including hoists and derricks, $57,840,000; metal working machinery (other than machine tools), $53,300,000; conveying machinery, $48,537,000; elevators and elevator machinery, $44,044,000; mining machinery, $40,325,000; woodworking machinery, $35,151,000; air compressors, $33,317,000; road making machinery, $30,694,000; paper and pulp ma-

chinery, $30,456,000; laundry machinery, $28,893,000; meters, $25,135,000; blowers and fans, $23,455,000; baking machinery, $21,730,000; cement and concrete machinery, $19,924,000.

In 1929 more than half the world's output of industrial machinery was produced in the United States, and the proportion becomes greater if all types of machinery are included; thus the United States in 1929 produced $2,273,000,000 of electrical machinery, Germany in 1928–29 produced nearly $1,000,000,000 and Great Britain in 1928 produced $400,000,000. In 1929 the American industrial machinery industry employed 648,229 wage earners, a decline of 18,750 over 1919 although production had greatly increased during the decade, indicating a substantial gain in output per worker. For the machinery industries as a whole the number of wage earners rose from 618,737 in 1914 and 998,484 in 1919 to 1,093,485 in 1929. Average yearly earnings of wage earners in the industrial machinery industry rose from $1430 in 1923 to $1530 in 1929, an increase based on the higher productivity of labor; the average is considerably higher than for manufacturing as a whole, indicating the larger employment of skilled workers. While the productivity of American labor has increased considerably since 1913, productivity in Great Britain and Germany has been practically stationary and may have declined. The productivity of the American worker in the machinery industries is perhaps three times as high as that of the European worker. This is another indication of the high degree of mechanization in the United States, partly a result of higher wages; in Europe this development is retarded by cheaper labor. Wages in the American machinery industries have not, however, increased as much as has output per worker.

One of the characteristics of the machinery industries is the comparatively high elaboration involved in their manufacturing processes. In the United States this expresses itself in the high proportion of "value added by manufacturing" to total value of output, ranging as high as 60 percent, which is considerably higher than the average for manufacturing as a whole. Except in electrical manufacturing, where an unusually high degree of concentration prevails, another characteristic is the relative lack of concentration, due to the great variety of products manufactured by the industrial machinery industry. Yet even here concentration is increasing; thus the number of establishments declined from 12,483 in 1919 to 10,476 in 1929—fewer than in 1914. Competition is relatively keen among producers of industrial machinery, only 10 percent of whom are organized in trade associations. Profits since the war have been high, with the exception of course of the depression years 1921, 1922, 1929 and those following; for the period as a whole average profits amounted to 10 percent.

The World War played an important part in the rapid growth of the American machinery industries, which were also enabled to invade foreign markets formerly dominated by Great Britain or Germany. American progress continued after the war aided by the growth of new industries, such as radio and aviation; by the unusual expansion of old industries, such as automobiles and electric power; and by the impetus to more intensive mechanization of all production processes in order to save labor and reduce production costs. The American machinery industries grew to their present size under the stimulus of an unparalleled mechanization of production processes. In the United States approximately $25 worth of machinery per capita is annually installed, compared with $10 worth in Great Britain and $9 worth in Germany.

Although Great Britain's machinery production was 25 percent higher in 1925 than in 1913 and capacity 44 percent higher, the British machinery industries were stagnant because of relative economic decline, overcapitalization, the multiplicity of small firms unable to operate efficiently or profitably and the intensification of American and renewal of German competition in foreign markets. In addition the British machinery industries are not organized into trade associations and are thus unable to defend their interests collectively and energetically. The most important cause of stagnation, however, is the fact that Great Britain has fallen behind in the march of technological progress; its machinery industries lack adequate modern facilities in both technical equipment and production methods. This was clearly revealed not only by the revival of foreign competition and the decline of British exports but also by Great Britain's extraordinarily increased demand for foreign machinery, which (on the basis of pre-war prices) was twice as high in 1925 as in 1913. Whereas Great Britain buys large amounts of machinery in the United States and Germany, these countries purchase comparatively trifling amounts from Great Britain. Without the aid of its markets in the dominions and colonies the British decline in machinery exports would have been greater. Finally, the decline in exports of

manufactured goods, which are of crucial importance to the economy of Great Britain, involved an additional blow to its machinery industries. The Committee on Industry and Trade (Balfour Committee), which reported that the net profit (on paid up capital) of twenty-seven machinery companies sank uninterruptedly from 11.8 percent during the period from 1911 to 1913 to 4 percent in 1925, declared that only the increasing adoption of mass production and improved technique could insure future progress.

During the World War Germany increased its production facilities by 20 percent, but in 1925 its production was only 70 percent of the pre-war level. By 1929 its production had risen to over $1,000,000,000, about equal to the pre-war output. The period of moderate inflation down to the close of 1922 favored machinery sales both at home and abroad, but when German firms again adopted gold prices after the stabilization crisis a sudden slump occurred; machinery had become too expensive for both the domestic and foreign markets. A slight recovery in 1924–25 was followed by a renewed slump in 1926 as a result of the economic crisis. In 1928–29 the output of Germany's machinery industries was twice as high as in 1926. Employment reached 80 percent of normal during 1928. In the ensuing period of decline machinery exports were forced to compensate for the reduced domestic market. Averaging 26 percent of total production for the years from 1921 to 1927, exports rose to 34 percent in 1929, 42 percent in 1930 and probably over 50 percent in 1931. Machinery sales and profits moreover were greatly reduced by excessive domestic competition and insufficient specialization of production in definite types of machinery. In 1913 German machinery corporations made an average profit of 10 percent on their capital. In 1925–26 this average profit rate was only 1.76 percent as compared with 2.26 percent for all industrial enterprises. By 1926–27 the rate of profit had dropped to 0.21 percent; it rose in 1928–29 to 5.25 percent and declined to 3.73 percent in 1929–30, while other German industrial profits were higher. This relatively low rate of profit has always characterized the German machinery industries. In 1930 these industries included about 3200 establishments employing 420,000 workers. Establishments employing about 80 percent of the total labor force were organized in a central association, the Verein Deutscher Maschinenbau-Anstalten, and in seventy-seven affiliated trade associations.

Practically all countries had a higher installation of new machinery in 1925 than in 1913. Germany had a lower installation, which is explained by extremely low domestic sales in 1925 because of the stabilization crisis and the shortage of capital following the inflation period. The comparatively large portion of the German population still engaged in agriculture, using much less machinery than is customary in the United States, is also a factor which must be considered in comparisons with Great Britain, where agriculture is relatively insignificant, and with the United States, where farms are highly industrialized. Moreover wages, which are about three times higher in the United States and about 30 percent higher in Great Britain than in Germany, also affect the differences in the consumption of machinery; the higher the wages, the greater is the extent of machinery utilization, as shown by Canada and the United States. Australia's utilization of machinery also greatly increased as a result of the rapid industrial growth of the country and its low density of population. Argentina and Cuba exhibited the same tendency. At the other extreme China and British India had the lowest utilization of machinery. Japan, on the other hand, increased its consumption of machinery 60 percent from 1913 to 1925 (allowing for the rise in prices).

The production and sale of machinery are directly dependent upon cyclical fluctuations. As the machinery industries supply the technical equipment for all branches of economic activity, their own development and sales react immediately to the slightest change in the economic situation. There is no separate growth for the machinery industries nor do special laws govern their development. On the contrary, as the producers of means of production they are hit early and severely by every depression, while a boom usually affects them less intensely and later than other industries. They also have maximum fluctuations in employment. Hence consideration of the variations in the production and sale of machinery is an important factor in the study of the business cycle.

In recent years important changes have occurred in the export of industrial machinery (Table II). Germany lost its lead in the world market as a result of the war. In 1925 American exports amounted to 35 percent of world exports, compared with 27 percent in 1913; Great Britain's share had declined from 28 percent to 24 percent, while the share of Germany (which had temporarily lost all its markets) had declined from 29 percent to 20 percent. American exports

rose again until 1929 and then declined sharply because of the world depression. Germany's exports reached their lowest point in 1923, but then rose uninterruptedly until they surpassed Great Britain's exports, which moreover remained consistently below the 1913 level. The total volume of the post-war world trade in machinery reached the pre-war level only in 1926, but it then increased until exports in 1929 were 63 percent higher than in 1913 (in pre-war prices). The three major producing countries shared equally in the 1928–29 increase in machinery exports; but the United States, aided by its large capital resources and technological superiority, retained its supremacy in the world market. In 1929 the three major producers combined accounted for 80 percent of machinery exports compared with 84 percent in 1913; the share of the United States was 35 percent, of Germany 25 percent and of Great Britain 20 percent. Nearly all the other exporting countries also shared in the rise of exports; France, Switzerland, Sweden, Japan and Canada made particularly large gains.

The American exports of machinery have increased steadily since 1923 (Table IV). Exports

TABLE IV

VALUE OF AMERICAN EXPORTS OF MACHINERY, 1923–29
(IN $1000)

YEAR	ALL TYPES OF MACHINERY	INDUSTRIAL MACHINERY
1923	282,296	141,651
1924	310,576	145,088
1925*	367,206	172,312
1926	399,541	178,602
1927	435,574	196,427
1928	496,571	218,335
1929*	611,498	267,819

* Exports for 1925 and 1929 do not correspond with the figures in Table II because of differences in classifications.

Source: United States, Bureau of Foreign and Domestic Commerce, *Commerce Yearbook, 1932*, vol. I (1932) p. 343, 349.

of industrial machinery increased considerably less than the exports of other types of machinery. The greatest relative increase was in exports of agricultural machinery, which rose from $50,373,000 in 1923 to $140,801,000 in 1929. The main items of industrial machinery exports included steam and internal combustion engines, $16,649,000; construction and conveying machines, $25,492,000; mining, quarrying, oil well and refining machinery, $39,601,000; metal working machinery, $42,006,000; and textile machinery, $8,611,000. The geographical distribution of industrial machinery exports was as follows: Europe, $81,390,000; Latin America, $71,672,000; Canada, $68,713,000; Asia, $31,742,000; Oceania, $7,893,000; and Africa, $6,409,000. Machinery exports, chiefly to the markets of the Americas and Asia, occupy an important place in the foreign trade of the United States.

A significant aspect of the foreign trade in machinery is that countries producing machinery, not the less industrialized countries, are still the largest importers as well as exporters of machinery (Table V). In 1913 the older industrialized countries which themselves produce machinery absorbed 65 percent of world machinery exports; although this proportion declined to 55 percent in the post-war period the decrease was largely due to a temporary reduction in the purchasing power of several of the producing countries. While Great Britain's imports rose considerably in comparison with 1913 and the American imports (which were very small in 1913) also increased, Germany's imports remained practically constant. Among the other producing countries Canada and Japan experienced an extraordinary rise in imports. The imports of Italy and Norway remained constant, while Russian imports in 1928 and 1929 were below the level of 1913, although 1930 showed an increase of 65 percent. The trend toward industrialization of economically backward countries is clearly revealed in China's increased machinery imports and in the imports of Australia, New Zealand, South Africa and even Egypt and Argentina. This also appears from the fact that approximately 75 percent of the British exports of machinery are absorbed by the less industrialized countries. Germany dominates the machinery imports of nearly every European country, usually supplying 50 percent and more of the market. Great Britain does not dominate all its dominions and colonies; the United States leads in Australia and Canada as well as in all the importing countries of the Americas.

The industrialization of countries hitherto economically backward constitutes an urgent problem of world economy in general and of the older industrial countries and their machinery industries in particular. This tendency is strikingly revealed in the mighty efforts of Soviet Russia to industrialize its economy and build up independent machinery industries, even though it will continue to import machinery for some time to come. The trade in machinery within the group of countries producing large quantities of machinery will always be in the interest of general progress, technological development and useful competition. But the machinery exports

TABLE V

IMPORTS OF MACHINERY, 1913–30

COUNTRY	VALUE OF IMPORTS (IN $1,000,000)				PERCENTAGE SHARE IN 1929 OF		
	1913*	1928	1929	1930	GERMANY	UNITED STATES	UNITED KINGDOM
Europe							
Austria	26.7	12.7	14.2	11.5	66.2	9.7	4.4†
Belgium and Luxemburg	20.9	28.3	40.5	41.7	46.8	6.3	14.2†
Czechoslovakia	-	24.1	27.4	20.4	63.1	11.3	7.3
Denmark	5.1	8.5	10.5	12.2	47.6	16.9	12.8
Finland	4.4	8.4	7.6	5.3	42.8	10.6	14.6
France	53.1	54.6	88.4	104.3	53.4	14.0	12.7†
Germany	24.0	46.8	41.1	32.1	—	24.4	16.9†
Greece	0.3	7.3	7.2	5.5	38.6	12.2	20.8
Hungary	—	9.3	7.1	5.5	54.0	8.2	3.7†
Italy	24.1	34.2	41.9	33.0	46.5	11.9	14.6†
Jugoslavia	—	9.3	10.6	8.9	43.5	5.4	5.4†
Netherlands	19.8	45.2	53.7	49.7	58.4	7.0	14.9†
Norway	7.4	8.6	10.3	9.6	44.5	12.7	14.4
Poland and Danzig	—	30.4	26.0	15.1	51.2	6.2	12.0
Rumania	8.2	16.6	17.8	14.3	—	—	—
Russia	81.2	73.5	76.8	177.0	31.0	50.3	5.7†
Spain	16.8	34.3	37.1	33.0	34.0	11.8	15.2†
Sweden	5.8	14.2	15.9	14.1	51.8	28.2	10.7
Switzerland	8.1	16.7	19.4	18.2	67.8	12.6	5.2†
United Kingdom	22.8	66.3	77.2	70.4	26.0	52.3	—
Asia							
India	33.3	69.1	67.0	51.6	12.6	8.8	71.5
Japan	14.6	38.2	51.5	38.5	19.2	29.9	28.0†
Dutch East Indies	14.0	28.5	32.2	22.6	19.4	26.2	15.5
China	4.9	15.2	23.7	19.0	14.3	19.9	28.4
Oceania							
Australia	20.9	42.6	30.8	39.0	6.3	46.9	37.4
New Zealand	4.3	10.4	11.6	9.9	2.9	38.0	42.6
Africa							
Union of South Africa	15.2	30.6	33.8	24.7	11.4	26.5	52.2
Egypt	4.3	9.6	9.8	9.0	14.7	11.0	42.3
North and South America							
United States	6.7	22.5	32.9	24.2	42.9	—	15.7
Canada	37.2	118.7	112.4	71.9	0.9	92.6	5.2
Mexico	11.8	23.6	25.0	21.4	10.1	75.8	5.9
Argentina	21.5	52.4	67.6	47.6	14.6	54.9	12.4
Brazil	24.2	35.5	39.3	24.5	—	—	—
Chile	8.3	10.7	14.1	10.7	24.0	55.7	13.2
Peru	3.1	6.3	7.8	6.4	13.7	59.0	13.0

* For countries in their 1913 boundaries Figures for Austria include Hungary.
† As of 1930.
Source: Figures for 1913 and 1928 from Verein Deutscher Maschinenbau-Anstalten, *Statistisches Handbuch fur die deutsche Maschinenindustrie, 1930* (Berlin 1930) p. 61; figures for 1929 and 1930 and those indicating percentage share of trade in 1929 from statistics collected by the Verein Deutscher Maschinenbau-Anstalten

to countries which are mainly producers of raw materials and only slightly industrialized, such as British India, Australia, China, South America and even Japan, apparently involve two threats to the exporting countries. The imported machinery is used to produce goods which compete with similar goods formerly imported from the machinery exporting countries. At the same time there occurs a growth of machinery industries in the newly industrialized countries, competing with the machinery exports of the older industrial countries. It takes considerable time, however, for an economically backward country to reach the stage of production in any particular field already reached by the older industrial countries, and more time must elapse before the necessary markets are conquered. In view of the modern tempo of technological progress the older industrial countries will continue to enjoy, at least for some time to come, an undefeat-

able economic and technical advantage. Moreover economically undeveloped regions, such as China, are so large that industrialization instead of exhausting the demand for goods creates new and larger demands. This is especially true of machinery industries in the newer industrial countries, as the establishment of such industries is dependent upon coal and iron, skilled personnel, technical research, adequate home markets and a generally higher economic and technical development in other branches of industry. Technological and economic progress will continue to originate in the older producing countries, which will thus tend to maintain the supremacy of their machinery industries.

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See: INDUSTRIALISM; INDUSTRIAL REVOLUTION; MACHINES AND TOOLS; TECHNOLOGY; INVENTION; AGRICULTURAL MACHINERY; ELECTRICAL MANUFACTURING INDUSTRY; IRON AND STEEL INDUSTRY.

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MACHINES AND TOOLS

ANCIENT, MEDIAEVAL AND EARLY MODERN. The differences between the tool and the machine have never been clearly defined. A tool is an object with which man works directly upon material and transforms it. A simple machine is a tool with which man can save time and energy in his work without employing external energy; in this class are the lever, wedge, wheel and axle, pulley, screw and inclined plane. An assembled machine is theoretically, according to Reuleaux, a "combination of resistant bodies so arranged that by their means the mechanical forces of nature can be compelled to do work accompanied by certain determinate motions." The use of human motive power in its operation is characteristic of a tool, but that alone does not necessarily distinguish it from a machine, some types of which may also be operated by human motive power. A tool is distinguished from a machine by its comparative simplicity and its capacity of being handled directly by the worker, who is consequently limited to the use of only one or two tools at any particular time. A machine may be a combination of tools operating simultaneously within the frame of a mechanical contrivance; the tools are not handled directly by the worker but by the contrivance itself, which comprises the tool or working machine, the transmitting apparatus and the motor mechanism. But tools are a component part only of machines which work upon material and transform it; many of the older machines, such as the crane, and of the newer, such as locomotives and dynamos, are not mere combinations of tools, while many modern tools are more complicated than the earlier machines.

By utilizing natural objects man used tools before he made them. He gradually learned to fashion tools out of stones and flints whose chance shape favored his purposes. In almost all the known cultures of the stone age are found hammers, chisels, planers, awls, knives, scrapers, borers, axes and the like. These tools were at first extremely crude, usually worked only on one side; but they were gradually improved, polished and perforated for handles made of wood, bone and horn. The men of the stone age constructed the first combination tool, a stone with a sharp point for boring and two edges for cutting and scraping. They also constructed crude machines for boring and sawing stone; these contrivances invented more than five thousand years ago facilitated more precise work and saved time and energy. A gimlet rotated with

the aid of a hunting bow must grind to powder the entire content of the hole, which moreover does not become wholly cylindrical. The boring contrivances of the stone age utilized a hollow stick of elder or similar wood, with the addition of sand, to grind into the stone being bored; a cylinder of stone was left within the stick, and in this way the work of grinding to powder the mass of inner stone was avoided. Many half finished borings of this sort have been found in the stone working places as well as many bored out centers, all of which demonstrate this method of working. It would be a mistake to assume, however, that in the stone age there were employed only those tools and implements which have been discovered by the archaeologists. In all probability many more were in use, at least the lever, the angle and the plumb.

During the bronze, or casting, age great improvements occurred in the making of tools. Tools of copper, a metal which could easily be hammered into shape, in many cases preceded those of bronze. In the stone age the working parts of tools were set in wood—stone knives, for example, were set in wooden sickles; in the bronze age the tools were as much as possible cast out of one piece of bronze and only the handles consisted of wood. In certain castings which have been found the tool and the handle are of one piece. This period developed two important new tools, the file and the blowpipe for blowing a small flame, especially for use in soldering. The utilization of many different kinds of tools is revealed by the varied metal work of the bronze age, particularly its earlier stages, in which hammered sheet metal was produced without the use of heat. To beat out metal slightly convex hammers are needed as well as punches, molds and stampers; all the latter tools were of course beaten out with the hammer. Tongs were without joints and were similar to present day nippers. Some form of tools for riveting probably already existed. Many loose rivets have been found in excavations; not only sheet metal but also leather girdles were riveted together. The compass and ruler were also in use during the bronze age. The handles of tools in this era are remarkable for the accuracy of their fit in the hand, which it was desired to spare as much as possible. Nor were quite modern labor saving methods unknown; the great wagon wheels of about 500 B.C., unearthed in 1883 at Dejbjerg in Jutland and now in the Copenhagen Museum, are not made of separate short pieces put together to form a circle but are turned in a circle out of single blocks of wood.

Another contribution of the bronze age was the most important of all machines, the turning lathe. In its simplest form this consisted of two blocks between which the material being worked turned on two pegs of bronze. Around the material was twisted the string of a hunting bow, which was moved to and fro with one hand; with the other hand a bronze chisel was held against the revolving material. This form of the lathe has been preserved throughout the ages, and today it is found in as simple a form as the turning wheel of the watchmaker. By a slight alteration in the primitive lathe it is possible to drill, engrave, grind, polish, mill or stamp metal.

The error has been repeatedly made in investigations of the tools and machines of the bronze age of explaining too many things simply on the basis of present day skills. It is known, however, that there were in early times many methods, tools and machines which are no longer in use and of which consequently no knowledge at present exists. It is therefore necessary to reconstruct from the technique itself the tools and machines that were used. Lack of technical knowledge has been responsible for the neglect by research students of the technical and historical importance of the tools and machines used in this age, which reveal nearly all the basic principles underlying subsequent more highly developed forms.

In the casting, or bronze, age man learned to hammer bars of bronze into sheets without the use of heat. The forging age, usually called the iron age, is characterized by the production of ingots of pig iron in fire and their molding in fire by hammering. With the gradual improvement of the forge higher temperatures were developed and a fluid product obtained. The production of steel from iron was the most significant discovery of this age and was of the utmost importance in the development of tools and machines.

It may be assumed that as early as the stone age wooden rollers were placed underneath heavy burdens (tree trunks or stones) to facilitate cartage. From this the wagon wheel may have been derived. But it is unlikely that other wheels employed in the making of machines, for example, the water wheel or the windmill wheel, originated in the wagon wheel. In the Greek islands there still exist windmill wheels of the earliest type: the ends of several radiating fixed spokes are bound together with a rope to form a polygon, and between the spokes are fastened

triangular ship's sails. The water wheel probably developed out of the water lever with which grain was pounded. By placing a large spoon at one end of the lever and allowing water to run into it the ladle was made to lift up the pounder placed at the other end of the lever. When the spoon had sunk far enough it poured out the water and let the pounder fall. The water wheel resulted when many such spoons were placed around a revolving axis. It is striking that the oriental, Arabian and mediaeval water wheels clearly reveal the form of the ladle, or scoop. The form of the flat paddle in water wheels apparently first definitely appeared in Rome at the beginning of the Christian era. China developed the so-called turbine form of the water and windmill wheels, in which the shaft is vertical. Although folklore furnishes indirect testimony that ancient China had many machines, Chinese machine making must not be overrated; it is well established that only those Chinese books which were written under the influence of the Jesuits of the missions after 1726 contain impressive sketches of machines, many of which are pictures of European machines taken over by the Chinese.

The extensive Babylonian irrigation systems with their elaborate pumping apparatus indicate a relatively high development of machines and tools in old Asia Minor. This was also true of ancient Egypt. Many peculiar tools are pictured on the walls of old Egyptian tombs. The Egyptians did not use the spade but with a flat hoe beat the ground loose and threw the earth directly to one side. The carpenters used sawing tools which pressed apart slits made in the wood. This was necessary since the saw with crosscut teeth was unknown. Egypt probably developed the cogwheel and improved the potter's wheel, the disk of which in its primitive form was set going by the hand, so that the wheel was now rotated with the foot. The Egyptian ropemaker used a whirling flywheel by which the rope rotated continuously, but the ropemaker's spinning wheel was unknown. The Egyptian flywheel is found also in the Orient, where it is used to keep in continuous rotation the little prayer drums in the hands of the faithful. Two measuring machines, the balance scales and the water clock, were developed by the Egyptians. The tomb of Petosiris (300 B.C.) contains an excellent picture of an Egyptian turning lathe, and earlier reliefs depict oil and wine presses. The screw pump, with which Archimedes is reported to have become acquainted in Egypt, was probably introduced into that country by the Persian conquerors. The proper interpretation of a passage in Herodotus indicates that the Egyptian pyramid builders erected on the steps machines which raised the blocks of stone with the help of a great lever. This hoisting apparatus was adapted for other uses in the Egyptian and Asiatic hydraulic machines, which are still used in Egypt. The heavy stones of the pyramid of Khafre (*c.* 2850 B.C.) reveal notches into which the claws of the hoisting machine locked. Obelisks placed on sturdy boards were transported on rollers and were raised by being rolled upon an inclined plane, the end sliding into a huge pile of sand, which was then dug away; thus the obelisk already in an almost vertical position could be laid in its foundation.

The technology of the Greeks was based upon the earlier contributions of Asiatic and Mediterranean peoples. A critical examination has shown that practically all the technical inventions attributed to the Greeks were known long before. For example, the great battering ram for the demolition of fortress walls was not invented by the Greeks but was taken over from the Babylonians; on the alabaster reliefs of Nimrod (*c.* 680 B.C.), which are now in London, heavy transportable rams are delineated. The Pennsylvania University Museum has an important Babylonian seal impress bearing one of the oldest known representations of the plow; one of the men is in the act of seeding the tube, or grain, drill, through which the seed was dropped into the furrow. In these densely populated regions as well as in China such apparently modern agricultural machines were necessary. Syrian technicians were probably the inventors of the improved machines with which the Greeks and Romans shot cannon balls and arrows; reconstructions of these machines show an initial force of 24,000 kilograms, while according to Josephus a cannon ball of fifty-three pounds was shot a distance of 360 meters. Greek machines were skilfully constructed; one indication of this is the assertion of Plato that the world's axis rests on steel points, a comparison which must have been based upon experience with this mode of support. Plato stressed also the importance of experiment; he says repeatedly and emphatically that knowledge based on "counting, measuring and weighing" is a means of correcting the deception of the senses, a means of making apparent wonders clear and intelligible. Misunderstanding of Aristotle, who in his book on mechanics treats the subject dialecti-

cally but not exhaustively, was responsible for lags in many branches of technology; thus there was set up the doctrine that "nature abhors a vacuum," which became fatal to pneumatics, hydraulics and pump and engine construction.

An extensive array of tools and machines was described by Philo of Byzantium, a writer who lived in the second or third century B.C. Until recently it has been possible in only a few cases to prove that the machines described by Philo were in practical use at the time. It is certain that there was employed a form of treadmill run by human power for the purpose of drawing water from a well by means of a chain of buckets. Such a chain (chain pump) was also operated by ladle wheels built into a brook or river. Another type of wheel, the Persian wheel, had dippers alongside the ladles to raise the water level of brooks, the water being directed through ditches over the fields for irrigation. Philo also describes the steam bellows for blowing a fire, a contrivance for moving flap valves, and pumps with cylinders and pistons. According to him the cylinders were cast out of bronze and turned on a lathe.

Greek technicians, known as *technitai* or *mechanopoioi*, were the teachers of the Roman machine makers, who were classed among the building technicians or architects. Many machine parts have been recently unearthed, among others a well preserved middle section of a great Roman cannon in Spain, a water wheel in Pompeii and great screw presses in Herculaneum. Pompeian vases, reliefs and mural paintings as well as the many tools unearthed reveal an extensive Roman development and use of tools and machines, the economic and social significance of which during this era has not yet been adequately appreciated. This is largely because Roman as well as Greek writers give meager accounts of technology; only the more recent excavations and comparisons with other periods have revealed the high technical achievements of the Romans not only in building but in the development and construction of machines and tools. High technical excellence was required in the perfect execution of Roman bathtubs made of bronze plate, the drawn iron wire mentioned by the poet Claudianus (*c.* 400), which was probably a Roman invention, the work in colored glass and the making of intricate door locks. The blowpipe was used to manipulate glass paste. In one of the two imperial ships recently dug up in Lake Nemi there were found the remains of a ball bearing on which there apparently revolved a pavilion for the purpose of excluding the sun. The emperor Commodus had carriages whose wheels measured the distance covered by means of a clocking mechanism. Roman arenas contained elevators for the combatants and animals and heating systems were constructed under the floors of apartments. These mechanical contrivances and the great Roman buildings necessarily required many highly developed tools and machines.

The Pompeian water wheel as well as the many mills and machines for kneading dough revealed by the excavations indicate that water power and the power of animal driven capstans were commonly employed. These sources of power were not, however, utilized in the most rational manner. Horses, for example, were harnessed to the capstan in such a fashion that much of their power was wasted. In the mills there were signaling contrivances to indicate when a horse was going too slowly or was standing still. The horses wore eye flaps to keep them from becoming dizzy and it is possible that there existed a mechanically driven whip, which would seem to be depicted in reliefs and on sixth century war chariots. Roman grain mills in the period of the empire consisted of a cone shaped lower stone and an upper stone hollowed out in cone fashion and suspended on an iron plumb. Flat stones were used only in small mills turned by hand. Grinding mills for crushing oil seeds were described by Cato about the time of 184 B.C. The influence of the machine on occupations appeared in the separation of the miller and the baker. Originally the baker was his own miller, and the mills in Pompeii are consequently in the same room as the ovens. But when toward the end of the fifth century A.D. the water wheel displaced the horse capstan in the mill, the millers left the city to settle near water.

Pompeii was noted for the construction of large machines. The recently discovered water wheel, which was buried under lava in 79 A.D., is only 93 centimeters in diameter and only 17 centimeters thick; and Vitruvius (*c.* 14 B.C.) describes only small water wheels which turned very fast. But it must not be concluded that the Romans did not build large machines, especially water wheels. The Greek treading drum, in which persons worked in an erect posture, must have had a diameter of approximately 4 meters; Greek and Roman machine makers were therefore capable of building water wheels of corresponding diameter. Roman reliefs depict cranes, apparently 12 meters in height, in connection

with great treadmills run by at least five workers.

As has been shown by Henry C. Mercer in his books and in his museum, modern craftsmen are still dependent upon Roman tool forms, which were well adapted to their respective purposes. Many seemingly unsuitable Roman forms which cannot yet be explained may have involved certain methods of working unfamiliar to modern craftsmen. Roman shears were without joints and consisted of two knives connected by an elastic handle or flat spring, a form retained by women and tailors well into the Middle Ages. The Roman forms of sheep shears and turf shears are still in use. The failure of the Romans to use jointed scissors is puzzling, since pictures reveal that they were familiar with the linked tongs as early as the fifth century B.C. The Roman saw was constructed of a wooden frame held together on one side by a coiled rope which tightly held the blade of the saw, the blade being stationary.

Despite their meagerness Roman technical writings convey considerable information. Vitruvius describes the technical aspects of building, water works and wells, clocks and hoisting mechanisms, water mills and pumps, lathes, bellows and capstans, machine bearings and road rollers. The imposing Roman aqueducts described by Frontinus (*c.* 97), many miles of which were set on stone arches, distributed water through underground pipes soldered together out of single lead sheets. The consumption of water was measured by means of a small standard gauge at the home of the user. Since writings of Hero of Alexandria (*c.* 110) treat more of the science of physics and its apparatus than of machine construction, his automatic door opener and other such contrivances must be considered only as physicists' toys and not as instruments of daily use. This was also true of his anticipation of the steam engine (a wheel moved by steam); people marveled at the contrivance, but it was not utilized as a practical source of power. Both Hero and Vitruvius describe cranes having one, two, three and four masts respectively, which combine the lever, the pulley and the windlass. The handwritten illustrated textbooks on technology, apparently introduced by Apollodorus of Damascus (*c.* 126) and characterized by a passion for the remarkable and unrealizable, have been incorrectly considered technical textbooks. Since the long periods of apprenticeship resulted in entire familiarity with tool and material, it was not necessary that the textbooks should provide any instruction in these matters; in the illustrated manuals were incorporated, however, the more advanced technical ideas and the knowledge acquired from military campaigns and travels.

There were scarcely any changes (except retrogressive) in tools and machines during the early Middle Ages. Contrary to tradition, for example, bells were not invented by a Christian bishop but arose in definite technical dependence upon oriental bell founding. In Babylon, Greece and Rome only small bells were used at worship, on house doors, on collars of animals and in the market places. Larger bells were necessary to summon the Christian community. But there was no need of a new invention, since the ancients had mechanisms with which they cast huge parts of monuments, temple doors, pillars and the like, as may be seen from those pieces taken from pagan temples and palaces and still found in the churches in Rome. The idea of an inventive ecclesiastical technique was strengthened by the technical textbook of Theophilus (*c.* 1100); but his writings on tools, machines, enameling, glass blowing, glass mosaic work, bell founding, soldering, the preparation of brass, the beating of gold, inlaid enamel work, organ building, the making of paper, forging in a pit and damasking are merely the summary of knowledge inherited from the ancients.

Confusion in terminology creates many difficulties in the study of technology. Wire was originally drawn by a smith from a piece of beaten metal, or "forged"; later metal workers learned to draw wire in a drawing iron, and while the process was different the artisan was still known as a smith. Even fourteenth century writings speak of wire smiths, although no master workman manufactured wire except with a drawing iron. The artisan who worked without a power machine faced a difficult task, as the strongest tools he possessed were the muscles of his body. Toward the end of the fourteenth century an unknown master workman, probably a wire drawer of Nuremberg, conceived the idea of seating himself on a seesaw so that with a strong pull of his muscles and proper use of the whole weight of his body he could jerk himself backward; as he did so he grasped the glowing wire and drew it through the drawing iron. Sketches of these ingenious seesaws of the "jerker" appear in the house records of a Nuremberg handicraft establishment. Work on the seesaw was difficult and tedious. Then a jerker conceived the idea of connecting the seesaw to the winch of a water wheel by means of a strap, which is pictured in the first

printed textbook on civil engineering, published by Biringuccio in 1540 in Venice. The man still rocked himself back and forth, however—an excellent example of how slowly technological progress moves. Disregard of this slow progress is responsible for an entirely false conception of the development of technology; many writers envisage a non-technical antiquity and a Gothic era singularly rich in inventors favored by God and cling to the long refuted notion of an "age of inventions" around the year 1300. This is not correct. Of the three greatest inventions, gunpowder, the compass and the printing press, the first two were Chinese inventions, the compass being introduced into Europe as early as 1000 and gunpowder in the thirteenth century, while the printing press was not invented until two centuries later.

Nor must too much importance be ascribed to the few inventions whose developments are well known. The origins of the majority of technically important inventions are still a mystery. Especially significant is the fact that practically nothing is known of the inventors of tools and machines. There is no inkling of who was the first to introduce a treadle into the loom or the heavy ironworking hammer lifted by the water wheel. The treadle loom appears first in a wall painting around 1310, and there is a German account of 1320 of a great piece of iron construction with the aid of water power. This, however, is wholly fortuitous; it is possible that these mechanical contrivances are hundreds of years older. Inventions of tremendous significance appear suddenly, but their origins are unknown. There is, for example, the mechanical escapement wheel of watches, the origin of which cannot be determined even within several centuries. When a technician devised some mechanical device he did not always try it out at once but often only sketched it. The need for such a contrivance might arise suddenly during times of war and disappear immediately after, with the result that the idea was forgotten: much has thus probably been lost; the old chronicles, for example, tell of wonderful machines once used during a military campaign and of how the Saracens quickly invented machines of their own to counteract the machines of the crusaders.

The introduction of new tools and machines moreover often met serious resistance. In Cologne in 1397 tailors were forbidden to use a machine for pressing the heads of pins. New machines were frequently ordered destroyed by the guild authorities and inventors sometimes even punished by imprisonment. Only when a new tool or machine benefited a larger circle was it finally accepted. Thus in 1298 the cloth weavers of Speyer were permitted to use the spinning wheel.

Machines of a quite modern character appeared in the later Middle Ages. In 1272 Borghesano, who invented a process of silk reeling, brought from Lucca to Bologna a machine which automatically twisted silk thread as it came from the cocoon into strong spun silk; the machine is reported to have contained from 100 to 120 iron spindles which were all turned simultaneously by a water wheel. It was decreed that whoever showed this magnificent machine to a stranger should be hanged, and it was apparently not until 1555 that it became known in Switzerland and not until 1718 in England. The technology of the English cotton industry which later developed was a technical derivative of the machines in the Italian silk industry of the thirteenth century.

The many thousands of technical sketches by Leonardo da Vinci, which deal with the improvement of tools, lathes and screw cutters, military and power machines, spinning and cloth shearing machines and the like, were not wholly representations of his own inventions but developments of already existing devices which Leonardo wished to improve and to introduce on a large scale. About 1500 he made a sketch of a yarn distributor for bobbins in a spinning machine, a contrivance which was not invented in England until 1794. Leonardo also constructed a steam cylinder with pistons in order to study the action of steam and even tried to shoot a cannon ball from a steam cannon.

The technical literature of the times must not be considered as a collection of fantasies. In the first printed book on machines, published in 1472 by the Italian Valturio, and in the later books of Biringuccio and Agricola the descriptions of machines are based on experience and portray machines and mechanical procedures actually in use. While this cannot be said of subsequent technical literature, even in the latter the descriptions cannot be dismissed as merely fantastic. Historical research makes it increasingly apparent that the machines described were either actually constructed or could have been made without difficulty. Very few of these machines, however, remained in practical use. Later there arose another literature, which aimed to familiarize laymen with the working of new tools and machines and which indicates the

relatively extensive use of mechanical devices in the late Middle Ages.

The illustrated manuscripts and books of the time, which increased greatly in number with the growth of mechanical methods of production, throw considerable light on the tools and machines that were in use. One book describes little rolling machines with which to roll lead strips for window glass trimming. Domenico Fontana in 1590 minutely describes and sketches the tools and mechanical apparatus which he used to transport three enormous obelisks from Egypt to Rome and to set them up in the latter city. Another book describes a ribbon weaving machine, said to have been invented by a citizen of Danzig in 1590, on which several narrow ribbons could be woven simultaneously; previously a ribbon had to be woven by itself on a frame. There are descriptions of tools, usually considered wholly modern, with many parts which could be substituted quickly for each other, resembling the combination of a three-cornered awl and a borer. Many other complex constructions are pictured and explained. Investigations have been confined to the development of a few tools only, but this is wholly insufficient, since the principles of construction involved in any particular tool or machine could have been transferred to another tool or machine in a fashion which cannot be demonstrated today.

In a German manuscript dated 1505, now in the Preussische Staatsbibliothek (MS. Germ. Quart. 132), which contains excellent illustrations of the borer, brace, rounded knives for cutting circular plates, compasses, calipers, tools for tightening crossbows, branding irons, pliers and tools with hollow handles for the insertion of other tools, there appear for the first time two important clamping devices, the vise and the joiner's bench with two clamps movable by means of screws. The screw was established among tools as a saver of time and energy by several unknown inventors toward the close of the fifteenth century. A study of the vise used by metal workers is especially interesting. The Orient and the ancient world had no clamping devices among their tools. The material being worked was held fast by the hands or propped against one or more wedges or pins. Woodworkers did the same on the planing bench. In the house records of the Nuremberg handicraft establishment there are many examples of clamping devices used by metal workers and joiners, but none is equipped with screws. Joiners were apparently also unfamiliar with the screw clamp; they were so skilled that each could work upon loose material. With the introduction of the screw this skill gradually disappeared. In the manuscript of 1505 the vise, although still constructed entirely of wood, is set with iron clamps. A kind of hand vise entirely of iron appeared in 1438 in one of the illustrated manuscripts on military technique. In 1528 locksmiths are pictured working on a small iron vise. The screw spindle, which lies parallel to the nearer edge of the workbench, has on the right side a four-edged nut which can be tightened or loosened by means of a free key. Progress, however, was slow; it was not until the close of the eighteenth century that circular saws were developed in France and England.

Great improvements were made in the lathe. In 1413 in Brunswick an enormous cannon was bored weighing 8.7 tons, the work on which required a heavy wooden lathe; in the eighteenth century such simple lathes were used for turning very heavy stone pillars. These improvements in the lathe came very slowly; for centuries the material being worked was turned by means of a bowstring, and half the revolutions were wasted as the material revolved. In Nuremberg by 1411 there existed lathes on which material turned in only one direction, and later lathes were operated by a crank and flywheel. One such lathe was designed by Leonardo da Vinci and similar lathes were used by stone engravers. An earlier improvement was the lathe with a support moved by turning a screw. In 1590 a lathe was made equipped with a guiding spindle, but the invention was suppressed and did not reappear until the eighteenth century. By 1700 the belt driven lathe was coming into extensive use. The lathe and its tools were now being exquisitely finished technically; it is possible that not only round but also oval and odd shapes were turned. Although the revolving disk was in use by this time, it was kept secret and was not generally used until the nineteenth century.

The lathe led to the development of the cutter, a tool of the utmost importance in modern industry. Originally the cutter was a tool equipped with a handle and sharp teeth, which was used to cut through strong iron barriers during siege warfare. In building the large instruments for the astronomical observatory in Peking in 1668 the Jesuits in order to level out the great astronomical circle used steel cutters driven by power from a donkey driven capstan. In south Germany toward the close of the seventeenth century the needle makers apparently used small,

round cutters, which were made rough all around in the manner of files, on the tips of which the needles were placed. By 1713 these cutters were so developed that their teeth were used to cut the wheels of a clock.

In mining and smelting there was a considerable technical development, particularly in the construction of pumping, transport and ventilating equipment. By the beginning of the eighteenth century there existed a considerable variety of tools and toolmaking machines made of iron. Machines were becoming larger and their construction imposed heavy demands on tools and machine tools.

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Modern. The technology of machines and tools already in existence served as the starting point for the development of new machinery which culminated in the industrial revolution. An increasing construction of larger and more complex machines during the sixteenth and seventeenth centuries not only improved mechanical engineering but led also to the technological application of scientific discoveries. At the same time the commercial revolution and the early factory system provided an economic basis for the introduction of machinery. Under the early factory system tools were improved and simplified and many new forms of tools were created to meet the requirements of increasing specialization and division of labor; this simplification and multiplication in turn suggested their mechanical combination into machines. Moreover the increasing fund of technical knowledge was enriched by the skill and experience of the machinists who, while engaged in construction or repair, improved upon or invented machines. Particularly in the manufacture of metal products did machinery come into greater use in the early factory; one such establishment had an imposing array of water driven slitting, pressing, shearing and rolling machines.

The progressive realization of the technical function of machinery completely revolutionizes the relations between labor and production (and social relations in general), a socio-economic development which increasingly conditions the nature of machinery. The creation and improvement of tools emphasized the primacy of labor in production by multiplying its skill; technology was essentially an accumulation of manual skills in the operation of tools. Machinery transfers skill to the machine, subordinating the worker to the mechanical equipment of production; technology becomes essentially an accumulation of engineering skill and of machines and processes which tend to reduce the relative importance of manual skill.

The machine of the industrial revolution was basically a contrivance which mechanized existing tools and reproduced manual actions. Crocheting and knitting were mechanically combined in the stocking knitting machine of the seventeenth century. Prior to the invention of spinning machinery the spinner held a single thread between the thumb and forefinger, a process which was replaced by the movable carriage in Hargreaves' spinning jenny, which mechanized spinning. The rollers in Arkwright's spinning frame likewise were substitutes for the human fingers, twisting the yarn as it was wound on the spindles. The tool formerly held and operated by the worker was incorporated in the machine, which combined and mechanically operated a number of similar tools; the spinning jenny, for example, operated eight spindles simultaneously. Other machines might incorporate only a single tool, but the mechanization increased the speed, accuracy or capacity to produce. While the machines of the industrial revolution were essentially mechanized tools or their combination, this is true only in part and frequently not at all of a whole series of machines created by later technological development, which has also increased enormously the importance of apparatus, a means of production totally dissimilar to machines and tools.

Textile machinery was improved considerably during the sixteenth and seventeenth centuries and offered the most favorable technical and economic basis for the development of new machines. By 1745 the ribbon loom was practically automatic, the worker simply supplying power and stopping the machine to tie broken threads. One deficiency of the ribbon loom, the difficulty of controlling the shuttle operating through a wide web, was overcome by the flying shuttle. This invention, which was first used in the woolen loom, where it permitted weaving of wider cloth and cut in half the worker's labor, was by 1760 introduced in the manufacture of cotton cloth; the resulting increased demand for yarn and the rise in prices created greater interest in mechanical spinning. Many spinning machines had been built, but they were imperfect; the problem was finally solved by the spinning jenny and the spinning frame. The deficiency of the jenny in being able to spin only weft thread was rectified by the frame, which

spun both weft and warp, while Crompton's spinning mule combined and improved upon both, producing a finer, smoother and more elastic yarn.

Complete realization of the mechanical revolution required a new source of mechanical power. There had been no progress in this direction since the Italian turret windmill of the fifteenth century. Water power was used more and more, but it involved limitations in the location of industry and the relatively inefficient water wheels were incapable of moving very heavy machinery. The expansion of mining had led to important improvements in pumping machines and to an increase in mechanical and scientific knowledge which contributed to the invention of the steam engine. Early in the eighteenth century Newcomen devised a steam pumping engine. But this steam engine was limited to pumping in mines, until Watt transformed it by means of the separate condensing chamber and other improvements, which from reciprocating motion produced the rotary motion necessary to drive machines. The reciprocating steam engine promptly displaced human and water power in the driving of textile machinery. A single prime mover was now able to supply power to several working machines; and the factory became a weird maze of belts, ropes and pulleys whirling overhead and alongside the machines. Larger and more complex machines could now be constructed, and these in turn required more powerful steam engines, which created new problems concerning economy in the transmission of power and the design of machinery.

These developments depended upon and stimulated progress in metallurgy. Few metal parts had been used in the early machines; water wheels, windmills and the machines of the industrial revolution were constructed mainly of wood. But the steam engine and the new and heavier working machines required large amounts of iron. Metallurgical advances followed, combining mechanical and chemical features. The steam engine contributed directly to the transformation of metallurgy, being used to furnish power to the forge hammer and the blast.

The development of new techniques in metal working permitted the construction of larger, more complex and better designed machines. Considerable progress had been made in metal working tools, machines and appliances; power driven shears, rollers and hammers were widely used by 1750. But existing metal working machines were neither powerful enough nor under adequate control; they lacked precision in producing the parts needed for the new machines, especially the steam engine. The construction of machinery had to become a function of machinery, increasingly independent of the skill and muscle of the worker; and machine tools, which shape metal into wrought forms by bending, pressing, shearing, paring, boring, had to be more powerful, larger and of greater precision. Improvements in the boring machine were of crucial importance as they made possible the manufacture of more accurate and larger cylinders and the construction of more efficient and powerful steam engines. Introduction of the milling cutter with its larger number of teeth, which eased the strain on each tooth as it cut, was of great significance because grinding machines had not yet been developed. Around 1800 came the power driven lathe; and the accuracy of its work was in turn enhanced by the slide rest, which was soon adapted to other machine tools. Where formerly the worker himself had held and guided the lathe's cutting tool, it was now held by the rest moving parallel with the work's axis, the worker simply turning a screw handle; the result was greater regularity of pressure and uniformity of work. Improvements in the screw were of great importance in the development of machine tools and heavy working machinery. The lathe and other machine tools were used to cut screws of more uniform thread, thus making interchangeable all screws of the same size. Planing, shearing, pressing and drilling machines were made larger and more precise in their operation. The production of more accurate machine parts led to accelerated manufacture of interchangeable standardized parts. A variety of small precision instruments were put to use; at the same time some machine tools were made larger and more powerful, among them the steam hammer and the massive lathes for machining the driving wheels of locomotives and the flywheels of steam engines.

The liberation of machine tools from the limitations of manual labor resulted in the transformation or disappearance of the tool formerly operated by the skilled worker. The slide rest, for example, replaced the highly skilled operator by a worker who had simply to turn a screw handle, and the worker himself was displaced when the slide rest was made automatic. On the other hand, machinery enlarged the scope of labor, quantitatively in the performance of heavier work and in higher output and quali-

tatively in greater accuracy. Machinery did work which labor could not do and did better the work which labor could do. New skills arose, particularly in machine shops, but they yielded gradually to more completely automatic machines. The construction of machines became increasingly dependent upon the technological application of science, where formerly it had proceeded largely by rule of thumb; its problems stimulated important advances in kinetics and thermodynamics, while engineering made ever greater demands upon mathematics, physics and chemistry.

New and improved working machines were called into being by technological progress and by the adoption of mechanical production in one branch of manufacturing after another. Not only were the earlier textile machines improved but new machines were created for other phases of the work, for mechanization of one process makes necessary the mechanization of other processes. By 1800 the power cotton loom, which produced a larger and finer output, was being introduced extensively and there were machines for mechanical cotton printing and wool combing. The Jacquard loom unified and improved upon elements of other looms; its system of cords simultaneously and automatically selected and moved the needed warp threads. This characteristic development of automatic operation was followed by contrivances to stop the machines when a thread breaks or when the shuttle bobbin is emptied of weft. In the 1880's a new type of spindle doubled the yield of spinning machines. By this time there was a large variety of machines which performed mechanically all operations involved in the production of textiles. A collateral development was the application of machinery to the production of garments, initiated by the sewing machine and followed by machines which sewed buttons, made buttonholes and cut cloth. Starting with the invention of the skiving machine in 1845, which mechanized the skiving knife, the manufacture of boots and shoes was within fifty years completely mechanized by an intensive division of labor and specialization of machinery based on one hundred operations and scores of machines. The manufacture of pulp paper, while essentially a product of chemical research and its industrial application, depended also upon extensive improvements in machinery; by the 1870's paper making was almost entirely automatic, employing relatively few workers. In a modern paper plant the machine is fed the fluid pulp at one end and at the other emerges the rolled paper—all operations are automatic within the limits of the machine. In the making of steel the regenerative open hearth furnace speeded up the mechanization of all processes by means of machines of immense size, complexity and capacity. The molding machine transformed foundry work, and there was a parallel development of machines for the fabrication of steel. Use of the regenerative furnace with the continuous melting tank was followed within twenty-five years by the complete mechanization of glassmaking and the perfection of the astonishingly complex Owens automatic bottle machine. While the linotype machine substituted one skill for another, the printing press developed to the point where multiform operations may be performed automatically by one giant machine: in newspaper plants the paper is fed at one end and emerges a complete, folded newspaper of scores of pages at the other. The canning of foods involved the use of complex and almost automatic cooking and cooling apparatus, measuring devices and can packing machines. The milling, measuring and packing of flour was mechanized until only a relatively trifling labor force was necessary. In one industry after another machines inexorably invaded the province of manual labor.

Machine tools were early adapted to the production of a variety of metal wares: already before 1800 the milling cutter was used in the quantity manufacture of keys, and metal working machinery was applied on a large scale to the production of firearms, sewing machines, metal gadgets of all sorts and scores of devices for homes and offices which mechanized not merely manual skills but intelligence itself, as in the case of calculating machines. They were adapted also to the production of agricultural machinery, which, starting with improvements in the older implements and tools and the invention of the mechanical reaper, was augmented by a large variety of machines and implements. Woodworking machines, ranging from the cutting of logs to fine cabinetwork, were based on adaptations of the lathe, drilling, milling, grinding and other machine tools, mainly of the cutting type but much keener than those used on metal.

The construction of more and more diversified machinery could not have been accomplished without the increasing automatization of machine tools and advances in the manufacture of interchangeable parts. While the parts of ma-

chines became more complex and varied they also acquired more regularity, and this created new standards of efficiency and accuracy for machine tools. These standards were made possible after the middle of the nineteenth century by innumerable improvements in machine tools and particularly by the development of the turret lathe, the automatic screw machine and the milling and grinding machines. The turret lathe enhanced accuracy and control. The automatic screw machine, several of which could be attended by one worker, meant production of cheaper and better screws. The old milling cutter required frequent repairs because its shallow teeth were quickly rendered useless; the cutter of the new milling machine had greater cutting depth and could be kept sharp for a longer time and reground in its hardened state. Constructed in a variety of types, the universal milling machine displaced considerable manual labor, performed high quality work and was peculiarly adapted to mass production, since the rigidity of the cutting tool and its multiple edges permitted accurate and cheap reproduction of duplicate shapes and forms. Hand filing had been previously required but was now done more accurately and with less labor by improved machine tools. There were great advances also in planing machines and riveters; in presses for both hot and cold metal; in shearing, drilling and other machine tools. New tools developed, among them the pneumatic drill operated by compressed air, which works at tremendously high speeds and can be used in any position within the limits of its hose. Higher speeds and deeper cuts, more than doubling the output of a machine, were made possible by the introduction of high speed steel after the 1880's, and twenty years later machine shop practise was revolutionized by the increasing use of harder and more stabilized alloy steel for cutting tools. The greater the rigidity of the tool the greater the accuracy and automatic character of operation, hence the development of jigs, fixtures and other appliances (the screw wrench, angle plate, block, wedge, strap, clamp and bolt).

Meanwhile apparatus as a means of production became increasingly important as the technological application of chemistry created new and modified old industries. Apparatus is most highly developed in the chemical industry with its array of containers, pipes and similar contrivances but it is also of great importance in other industries which require one or more chemical processes. It was first used on a large scale in the production and distribution of gas, in the chemical industry itself, in the manufacture of rubber and in the production of petroleum and its derivatives. With the development of synthetic products (dyestuffs, pulp paper, cement, celluloid, nitrates, rayon, regenerated and artificial leather and rubber, distillates of coal), in which the fundamental technology involves complex chemical action and precise control, apparatus attained still greater significance. It is of great importance in the derivation of by-products and it is required also for chemical processes in the manufacture of glass and soap, in blast furnaces, in the production of alloys and other industrial operations, in electrolysis. Production by means of apparatus implies more extensive and intensive exploitation of raw materials—the creation of a series of new products beyond the capacity of machines. Not much labor is required in such production, which is highly automatic; the workers are wholly unskilled, acting under orders of a handful of chemical engineers.

As machines became more automatic, transfer of skill and division and specialization of labor became more marked. No more than average manual dexterity and intelligence are necessary to "operate" automatic machines. Although there are machines which perform all the operations required to turn out one complete product, highly developed mechanical production is based on the "serialization" of machines, as in the case of the many machines used in the making of boots and shoes. The work to be performed is considered as a mechanical problem, split up into its separate and constituent processes, with a machine devised to perform each process, the work "flowing" from operation to operation and from machine to machine. The decisive consideration is neither the worker nor the machine but the process itself and its mechanization and progressively automatic performance. This principle, inherent in machinery, is most fully realized in mass production, where intensive specialization and serialization of machines and labor are supplemented by a considerable amount of auxiliary equipment—belt conveyors, trucks, portable conveyors and loaders, chutes and pneumatic and gravity devices, cranes, electric hoists, automatic counting, packaging and handling contrivances. Characteristic of mass production is the fact that in an automobile plant a spring formerly made by one mechanic is now made by thirteen processes involving eleven workers and a series of machines.

As in the case of the steam engine the development of new sources of power profoundly influenced the structure and operation of machines. Improvements in the steam engine, in the generation and transmission of its power, particularly in the form of the turbine, contributed enormously to the steady growth in the size and efficiency of working machines. The limitations of steam power were broken by the electric motor and the internal combustion engine.

Agricultural machinery was particularly influenced by the internal combustion engine. Steam power had been used to pull plows on large farms, but the results were unsatisfactory; the new oil engine was early adapted to the use of agricultural machinery, although limited because of its weight. But with the improvement of the oil engine and the construction of light tractors the way was opened for the intensive use of the new power on farms and their accelerated mechanization, especially after the introduction of the general purpose tractor. The tractor modified the older agricultural implements and machinery and forced the development of a multitude of new implements. The tendency is for the tractor to be adapted to the performance of all sorts of farm operations. Other changes in agricultural machinery were improved construction, better lubrication, more durable metals for cutting edges and wearing surfaces, easy manipulation and power lifts.

Electric power not only accelerated the mechanization of industry but greatly augmented the automatic character of machinery. Electric drive transformed the early transmitting mechanism of belts, shafts and pulleys. The advantages of electric group drive were at once apparent, especially in the elimination of engine attendance and of much of the wear and tear on bearings and belts. Still more advantageous was the individual drive with a motor for each machine; this made possible the most logical arrangement of machinery, of prime importance in serialization and mass production. It was but a short step to the designing and construction of motors adapted to the needs of particular machines; finally the motor itself became an integral part of the machine. The influence of electricity on machinery goes beyond the superiority of electric drive; it results in the designing of machinery in which the functions of control of speed, accuracy and quality are increasingly performed by electrical devices. The operation of machines is simplified and made more automatic, particularly in the recent manifestations of remote control and in the workings of the photoelectric cell.

Recent developments in machine tools are characterized by their increasing size, complexity and simplified automatic control. Despite the use of light metals (also used to reduce stresses in high speed reciprocating parts) machine tools are becoming heavier—one combination drilling and boring machine weighs 70,000 pounds, requiring but a single operator who controls the entire machine by one push button station. Electric motors are being built into machine tools. Other tools are operated by hydraulic drive, although they still make use of electricity for control and other purposes. Machine tools are adapted to a variety of purposes; horizontal boring machines have been constructed which can be used for milling, drilling and tapping, while other machines perform multiple operations in one continuous process. Operation of these machines becomes increasingly automatic; in one boring machine four moves of a lever control the whole operation, and reversal of the lever releases the work. In other machines control is even more simplified and automatic. The parts of complex lathes are equipped with individual motors, the push button being used to switch them on and off. Pressure and precision are intensified; a steam platen press applies pressure of 20,000,000 pounds with a maximum deflection of the platens of not more than four thousandths of an inch; one boring machine makes a hole cylindrical to within one hundredth of a millimeter; and standard dimensional gauges are accurate to three millionths of an inch.

In working machinery recent developments are marked by greater rigidity and speeds and larger outputs, resulting in heavier and more complex machines. New types of machine are continually being introduced, involving a high rate of obsolescence. In rayon plants there are spinning frames on which every spindle is driven by its own motor, far outstripping the older mechanical spindles; indeed electrification has rendered rayon production practically automatic, including the chemical stages. Pulp paper production is under remote control, concentrated in a series of gauges and push buttons; temperatures and pressures are electrically regulated. All machines are practically automatic in the silk industry, with the exception of reeling, in which the operator still performs a large part of the work. In the chemical industry automatic

operation and remote control are highly developed. In rolling mills the electrification of main roll drive and controls has resulted in automatic continuous production. Stocking operations in blast furnaces are becoming completely automatic through electric control. Machinery has been devised for the continuous strip sheet rolling of steel sheets and tin plate, which was formerly done on hand rolls. Remote control is most highly developed in certain hydroelectric power plants, in which not a single worker is present and reports are made by automatic electric signals.

These developments in the construction and operation of machinery are not characteristic of all plants, but they are an ever growing tendency inherent in machinery. The fullest expression of this tendency is the machinery and the auxiliary equipment utilized in the mass production of automobiles, in which an elaborate development of the conveyor system is the basis of the working process, accompanied by the most intensive division of labor and specialization of machines. An opposite but complementary development is the increasingly large automatic machine which combines a series of operations formerly performed by separate machines, and which is the basis of the automatic plant. Automatic machinery, the increasing division of labor and specialization of machines and the automatic plant are completing the revolution in the relations between labor and production.

LEWIS COREY

See: INVENTION; TECHNOLOGY; MACHINERY, INDUSTRIAL; HANDICRAFT; FACTORY SYSTEM; INDUSTRIAL REVOLUTION; MECHANIC; ENGINEERING; POWER, INDUSTRIAL; IRON AND STEEL INDUSTRY; ELECTRICAL MANUFACTURING INDUSTRY; ELECTRIC POWER; METALS; MINING; UNEMPLOYMENT.

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MACÍAS PICAVEA, RICARDO (1847–99), Spanish sociologist. Macías Picavea studied at León and at the universities of Valladolid and Madrid. He was a profound sociologist, extremely well prepared for the discussion of the evils afflicting Spain, the subject which constituted his constant preoccupation. The philosophic discipline which he acquired as a favorite disciple of the Krausist Julián Sanz del Río added precision and clarity to his powers of judgment. As a teacher of psychology, logic and ethics at the Instituto de Segunda Enseñanza of Tortosa and of Latin, geography and history at that of Valladolid he familiarized himself with the defects of Spanish education, which were among the principal bases of the national decadence. As a journalist he came in contact with the majority of the national literary, artistic and political problems and as an indefatigable traveler and geographer he acquired a full knowledge of the conditions of the peninsula. For a time he was in politics, professing democratic principles. But while he

saw the national defects clearly he did not allow himself to be dominated by pessimism, for he considered the fundamental conditions and characteristics of the nation to be good. He found the origin of the mischief in the deflection from the path of inherent development which had been suffered by the national life as a result of the Germanic background and orientation, especially the Caesarism, of the Austrian dynasty; in his time the resulting collapse reached its culmination in the defeat in the war with the United States, a disaster which he was among the first to foretell. When this occurred, he wrote with feverish anxiety and haste his greatest work, *El problema nacional* (Madrid 1899). Discounting the inevitable defects of a study which is so comprehensive—it exposes the reality of the decadence through an analysis of the national physical environment, population and cultural, educational, moral, religious, political and economic life and gives the causes and remedies for the decadence—it abounds in highly original observations and in judgments which have not been surpassed: The numerous, all embracing measures proposed include methods designed to restore the soil, vitalize education and revive and expand the traditional corporate, regional and local life of the nation and effect its participation in government. For the execution of the reforms Macías Picavea desired a tutelary dictatorship under the direction of a man of the hour. The book aroused great admiration among the intelligent. Whatever its intentions, it was among the outstanding examples of the "literature of 1898," which helped to evoke a feeling of deep pessimism, the prelude and in part the stimulus of the present national revival.

B. SÁNCHEZ ALONSO

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MACIEJOWSKI, WACŁAW ALEKSANDER (1793–1883), Polish jurist. Maciejowski's work may be said to have begun in 1820, when, called before a commission which was undertaking a revision of the laws of the Polish Kingdom, he demanded in accordance with the principles of the historical school that it should be based upon the native Polish law. When in 1832 he published the first two volumes of his major work, a history of Slavic law, he achieved almost instant renown. The work was translated into German and Serbian and a supplementary work on the history, writings and legislation of the Slavs was translated into Russian and in part into French. Knowledge of the history of Slavic law was very elementary when Maciejowski began his work. He had to make himself acquainted with the printed sources of Slavic law and he even worked with manuscripts, publishing a number of valuable Slavic legal monuments, which until then had remained unknown. At a time when the interrelationship of the various bodies of Slavic law was not yet understood he showed that they arose from a common source of prehistoric Slavic legislation. Embracing in contrast to his predecessors —for instance, the Poles, Tadeusz Czacki, Jan Wincenty Bandtkie—a considerably wider number of sources and with his superior mastery of the historical method he was able to establish his thesis of the common origin of the Slavic laws by showing the analogies existing among them. He thus did away with the erroneous theory that the Slavic laws were taken over from alien sources. He also pointed out, as has been confirmed by further investigation, that Slavic elements were retained longest in Polish law. Despite some faults—he often allowed himself to be transported by fantasy—he nevertheless performed a tremendous service in stimulating the study of law among the Slavs and especially in Poland.

STANISŁAW KUTRZEBA

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McKENZIE, SIR JOHN (1838–1901), New Zealand statesman. McKenzie, a Scottish shepherd, emigrated to New Zealand as a farm laborer in 1860. He became a small landowner, won a seat in the provincial council of Otago and in 1881 was elected to Parliament. When the Liberal-Labour party, drawing much of its support from small farmers and farming aspirants, came into office in 1891 and embarked upon its experimental program he became minister of lands and he held this office until 1900. McKenzie's experiences as a crofter in Scotland had strongly convinced him of the right of a farming peasantry to have access to the soil, and his belief in the evils of landlordism was confirmed by the dummying and other devices of land aggregation which were particularly rife in Otago and which were at that time aggravating an economic depression. He was largely responsible for the important measures of land reform carried through by Ballance's and Seddon's cabinets, measures not motivated by doctrinaire devotion to any theoretical conception but designed to meet a concrete situation. These measures provided progressive taxation of unimproved values; compulsory repurchase of land for closer settlement; the conservation of crownland through the development of a revised leasehold policy with further limitation of areas alienable; credit advances to small farmers; and the creation of a Department of Agriculture. They were the chief means of creating a group of small state tenants and freeholders and of ending the economic deadlock, but they were aided by the advent of a period of rising prices and by the development of refrigeration for meat and dairy products. The most permanent and valuable aspects of McKenzie's program are the credit advances and the expert guidance provided by the Department of Agriculture. These have established themselves as governmental functions of almost unchallenged usefulness.

J. B. CONDLIFFE

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MACKENZIE, SIR WILLIAM (1849–1923), Canadian capitalist. Mackenzie was born at Kirkfield, Ontario, and during his early years was school teacher, merchant and lumber contractor for the construction of several Ontario railroads. In 1884 he undertook large lumber contracts for the mountain division of the Canadian Pacific Railway and in 1888 in partnership with Donald Mann, H. S. Holt and James Ross began constructing the Canadian Pacific short line through Maine and important lines in western Canada. His close relation with Mann, a master railroad builder, the capital he acquired from railroad construction and the connections he made with financial and technical experts enabled Mackenzie to acquire large interests in public utilities in São Paulo, Rio de Janeiro, Monterey (California), Winnipeg and Toronto; in that field he was able to effect combinations bringing "into a harmonious union seemingly conflicting interests." He also acquired considerable interests in shipping, mining and life insurance companies.

In 1896 Mackenzie, definitely linked to the metropolitan activity of Toronto, entered the field of continental railroading by acquiring a small line in Manitoba. Thoroughly efficient at railroad building, his partnership met demands for railroads to compete with the Canadian Pacific and to open up sections of western Canada, which the Canadian Pacific had been forced to neglect by the necessity of following the southern route. To reach ocean ports and provide an outlet for the wheat trade his line, the Canadian Northern, was forced to build large non-remunerative stretches of road east and west; the line was completed against the pressure of governments and often by pressure on them. With the cessation of the land grant policy the Canadian Northern was compelled to rely on federal and provincial government guaranties of bonds and on the sale of common stock, but with the tightening of the capital market immediately prior to the World War and the wartime decline in immigration survival became impossible. In 1918 the insolvent Canadian Northern gave way to the Canadian National Railways. Despite the line's failure Mackenzie by securing efficient engineers, by cautious financing, by developing traffic and by securing capital at low rates had contributed substantially to the eventual success of the Canadian National Railways. He played a vital role in the expansion and growth of urban and pioneer communities which took place from 1900 to 1914.

HAROLD A. INNIS

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MACLAY, WILLIAM (1737–1804), American politician. Maclay was in many respects a typical product of the piedmont region. The son of a Scottish immigrant, he was born in New Garden township, Pennsylvania, and passed most of his life in the Susquehanna valley, residing on a farm near Harrisburg. He worked as lawyer, farmer, surveyor and land speculator, supported the revolution and after it held various legislative and judicial posts. In January, 1789, the Pennsylvania legislature elected him to the United States Senate, where he served until 1791. During his short term Maclay kept a journal in which he recorded caustically and with elaborate care the proceedings of the upper house of the First Congress of the United States. This work is not only an invaluable source for the political and social history of the period but it also indicates clearly the economic reasons behind the formation of the Federalist and Republican parties. As a western Democrat Maclay came into conflict with the dominant mercantile group in Philadelphia. This hostility was quickly extended to similar groups in New York and New England, and the antagonism was sharpened by his Anglophobia, agrarianism and devotion to states' rights. Every important Federalist measure except the tariff of 1789 met with his unqualified condemnation. The judiciary bill was the "gunpowder-plot of the Constitution"; the funding system he called "that political gout of every government which has adopted it"; the establishment of a national bank and the assumption of state debts were schemes of shameless speculators; the excise was a Pandora's box of civil strife. Federalism, in his eyes, was a way station on the road to monarchy.

Because of his bitter opposition to the Hamiltonian system it has been claimed that Maclay was the founder of the Republican party; but this contention has little validity. His suspicious nature and dour individualism prevented any real cooperation with Jefferson and Madison, who emerge from his pages with little more credit than do Hamilton and Adams. Professing to be guided by principle alone, he was profoundly affected by personalities; and rheumatism made him misanthropic. His brief senatorial career ended without the attainment of any of his purposes, one of the most important of which was the location of the national capital on the Susquehanna River; but Maclay had his revenge on his political enemies in his brilliantly written *Journal*.

ARTHUR P. WHITAKER

Works: *Journal of William Maclay*, ed. by E. S. Maclay (New York 1890; new ed. with an introduction by Charles A. Beard, 1927).

Consult: Beard, C. A., *Economic Origins of Jeffersonian Democracy* (New York 1915) p. 167–95.

McLENNAN, JOHN FERGUSON (1827–81), Scottish ethnologist. McLennan became a member of the bar in Edinburgh in 1857 and for some time after 1871 served as parliamentary draftsman for Scotland. While writing the article "Law" for the eighth edition of the *Encyclopaedia Britannica* in 1857 he became interested in the Spartan and Roman marriage ceremony of collusive abduction, which he interpreted in terms of the evolutionary hypothesis that symbolical forms of behavior were survivals of previous actual relationships. He developed the theory that female infanticide among primitive hordes led to a scarcity of women and therefore necessitated marriage outside the tribe, a practise which he designated as exogamy. Contending that only after a considerable advance in civilization did tribes join in political union permitting peaceful intertribal marriages, he held that wives could be obtained only by capture, the forms of which survived as symbols after force was no longer necessary. Subsequent research has proved that McLennan exaggerated the extent of infanticide and the prevalence of marriage by capture; although his term exogamy has become incorporated into the vocabulary of anthropology, his explanation of its origin is now regarded as untenable. Independently of Bachofen and Morgan, McLennan controverted the hypothesis, put in its most cogent form by Maine, that the patriarchal family was the original basic unit of social organization; he argued that an original promiscuity was superseded by the tracing of kinship through the female line, a practise which universally preceded descent through the male line, because of uncertain paternity involved in polyandry. He interpreted the levirate as being derived from polyandry. In his bitter attack on Morgan he

failed to grasp the sociological significance of kinship terms and held them to be merely terms of address. McLennan's controversies with his contemporaries gave impetus to significant research into the social organization of primitive societies.

BERNHARD J. STERN

Works: *Primitive Marriage* (Edinburgh 1865), reprinted in *Studies in Ancient History* (London 1876, new ed. 1886); *The Patriarchal Theory*, ed. by Donald McLennan (London 1885); *Studies in Ancient History*, 2nd ser. ed. by E. A. B. McLennan and Arthur Platt (London 1896).

Consult: Morgan, L. H., *Ancient Society* (New York 1877) p. 509–21; Tylor, E. B., in *Academy*, vol. xx (1881) 9–10; Stern, B. J., *Lewis Henry Morgan: Social Evolutionist* (Chicago 1931).

MACLEOD, HENRY DUNNING (1821–1902), English economist. Macleod is one of the more remarkable of that great number of self-made economists who, discovering certain problems neglected by orthodox economists, believed that it was their task to rebuild the science from its foundations and who by attempting to do so with insufficient equipment failed to secure recognition even for their real contribution. He was the son of a large Scottish landowner and prominent free trader parliamentarian and was trained as a lawyer. As chairman of a local committee on the poor law administration he distinguished himself at a relatively early age by recommending and successfully establishing the first poor law union in Scotland. His interest in economics as a science did not begin until 1854 when immediately after his acceptance of a directorship of the Royal British Bank he found himself engaged in a law case on the powers of the bank under the Joint Stock Banking Act of 1845. This case led him into extensive historical and theoretical studies, which were, according to a characteristic statement of his later years, "the origin of the modern Science of Economics." The first product of these studies, *The Theory and Practice of Banking* (2 vols., London 1855; new ed. 1902–11), is his most important work. Its exposition of the historical development of the policy of the Bank of England has long been the only convenient source of information for the study of those problems; even at the present time it has not been completely superseded. On most points Macleod adheres to the theories of the Bullion Report and he was one of the first to obtain a clear grasp of the role of discount policy. Of relatively less importance are his rather vague views on the relation between credit and capital, which were widely discussed and severely criticized. He insisted that the essential function of the bank was as a "manufactory of credit" and was probably the first to give a detailed account of the process by which bank credit is created (see particularly the article "Credit" in his *Dictionary* . . .). It is noteworthy, however, that his theories never led him, as might have been expected, to advocate unsound maxims of monetary policy.

From *The Theory and Practice of Banking* he proceeded to an attempted reconstruction of economic science in general, frequently restating his views on books whose titles were changed but whose subject matter was only slightly modified. A typical disappointed innovator, his distaste for the dominant school of economics was increased by repeated failures to obtain a university chair. The fact that after the disastrous failure of his bank in 1856 he with his fellow directors had been charged with a conspiracy to defraud and found guilty made his position still more difficult. In his theories, which were sometimes very ingenious but never completely worked out, he followed Lauderdale, Bastiat and Bailey and, particularly in his discussion of the theory of value, he had glimmerings of ideas which were later developed by the marginal utility and the mathematical school. Of the projected two volumes of his *Dictionary of Political Economy* (London 1858–63) only the first was published, but a portion of the material collected for it appears to have been used for his *History of Economics* (London 1896). In general Macleod found more recognition abroad, especially in France, than in England, although the British government employed him from 1868 to 1870 to prepare a digest of the laws relating to bills of exchange.

FRIEDRICH A. HAYEK

Other important works: *The Elements of Political Economy* (London 1858; 2nd ed. as *The Principles of Economic Philosophy*, 2 vols., 1872–75; 3rd ed. as *Elements of Economics*, 2 vols., 1881–86); *The Theory of Credit*, 2 vols. (London 1889–91, 2nd ed. 1893–97); *On the Definition and Nature of the Science of Political Economy* (Cambridge, Eng. 1862); *The Elements of Banking* (London 1876, 7th ed. 1902); *On the Modern Science of Economics* (Manchester 1887); *Bimetallism* (London 1894); *A History of Banking in all the Leading Nations*, 2 vols. (New York 1896); *Indian Currency* (London 1898).

Consult: Richelot, H. A., *Une révolution en économie politique* (Paris 1863); Lindner, M., *Die Kredittheorie von Henry Dunning Macleod* ([Görlitz] 1929); Koopmans, N. G. Cnoop, *Macleod's Krediettheorie* (Leeuw 1866); *Economic Journal*, vol. xii (1902) 583–84.

McMASTER, JOHN BACH (1852–1932), American historian and university professor. McMaster's reputation as a historian rests mainly upon *A History of the People of the United States from the Revolution to the Civil War* (8 vols., New York 1883–1913; new ed. 1927–29). The publication of the first volume gained for the author instant recognition and an appointment by the University of Pennsylvania to the chair of United States history, one of the earliest of its kind. During his forty years in the classroom and in the seminar he exerted a deep influence on his students, and a notable group of American historians acknowledges its debt to his instruction.

Influenced, it would seem, by the work of J. R. Green in England, McMaster determined to throw the major emphasis on the people of the United States rather than on the nation as a political entity. Although he was unable to maintain this distinction, his early volumes, which are probably the best of all his work, widened historical horizons by their stress upon social and economic history, their attention to the everyday life of ordinary folk, their appreciation of the importance of the frontier and their demonstration of the value of newspapers as guides to the past. They made clear to American historians that "the growth of democratic ideas had given dignity to the study of the individual."

McMaster's reliance upon the press, however, affected the balance and arrangement of his chapters and adversely influenced his style, which at the outset he had attempted to model on that of Macaulay. Space is too often allotted to the picturesque and the unusual at the expense of the more broadly significant currents; emphasis is produced by long quotations and the massing of details, and summaries are noticeably few. Because the manner and not the meaning of events is stressed, the narrative frequently lacks both relief and perspective.

McMaster's inclusive view of history places him among the founders of the "new" school of historians; while his evident patriotism, his belief in the superior virtues and manifest progress of Anglo-Saxons in the United States since 1776, his partiality for analogies between the "then" and the "now" and his chary use of footnote citations link him with his predecessors.

WILLIAM T. HUTCHINSON

Other important works: With the Fathers; Studies in the History of the United States (New York 1896); *The Acquisition of Political, Social, and Industrial Rights of Man in America* (Cleveland 1903); *The Life and Times of Stephen Girard, Mariner and Merchant*, 2 vols. (Philadelphia 1918); *The United States in the World War*, 2 vols. (New York 1918–20); *A History of the People of the United States during Lincoln's Administration* (New York 1927).

Consult: Paxson, F. L., "The New American History" in *Quarterly Review*, vol. ccxxiii (1915) 159–81; Fish, C. R., "Review of McMaster's History of the People of the United States," and Hutchinson, W. T., "John Bach McMaster, Historian of the American People" in *Mississippi Valley Historical Review*, vol. i (1914–15) 31–43, and vol. xvi (1929–30) 23–49.

McNEILL, GEORGE EDWIN (1837–1906), American labor reformer. The son of a Scotch-Irish immigrant who was an active antislavery propagandist, McNeill went to work at fifteen in a textile mill in Amesbury, Massachusetts, and later tried shoemaking, salesmanship and other occupations. In 1856 he removed to Boston, where he came in touch with the reformers interested in the shorter hour movement. Influenced by Ira Steward's theory that shorter hours increase wages by creating new wants, he organized and agitated from 1863 to 1874 for the eight-hour day. He was active in most of the reform societies which followed the Civil War and the panic of 1873. From 1884 to 1886 he was secretary-treasurer of the Massachusetts district of the Knights of Labor and struggled against the split of 1886 between the Knights and the trade unions. He helped organize the American Federation of Labor and in 1898 was its fraternal delegate to the British Trades Union Congress. In addition to writing for a number of labor papers he edited and largely composed the first real attempt at a history of the American labor movement.

He was first deputy of the Massachusetts Bureau of Statistics of Labor from its establishment in 1869 until 1873, and he served on state commissions on education, tax revision and uniform legislation. As candidate for mayor of Boston in 1886 he received about three thousand votes. In mid career he became an insurance agent and in 1883 organized the Massachusetts Mutual Accident Insurance Company, of which he was general manager from 1892 until the time of his death.

His career is illustrative of the social order and trend of the United States in the nineteenth century. To rise from a mill hand into the middle class by way of reform, politics, journalism and business was not uncommon. The limited nature of McNeill's reformist ideas was typical, and only his retention of labor sympathy distin-

guishes him from many who moved in a like direction.

NORMAN J. WARE

Important works: *Argument on the Hours of Labor Delivered before the Labor Committee of the Massachusetts Legislature* (New York, n.d.); *The Labor Movement: the Problem of To-day*, ed. by G. E. McNeill (Boston 1887).

Consult: Foster, Frank K., in Massachusetts Bureau of Statistics of Labor, *Labor Bulletin*, vol. xii, no. 2 (1907) 83–98.

MACONOCHIE, ALEXANDER (1787–1860), English prison reformer. In 1840 Maconochie, a captain in the Royal Navy, became governor of the penal colony at Norfolk Island, Australia, to which notorious convicts were transported from England. He found the colony to be a veritable hell hole in which mutinies, crimes and vice abounded. Maconochie instituted a series of reforms which he had already enunciated in tracts on penal reform. His chief innovation was the mark system, under which each prisoner upon entrance was debited with marks depending upon the gravity of the offense; these marks were redeemable by good conduct, and when all were canceled the prisoner was considered for conditional release on "ticket of leave." The daily redemption of marks was also used as a credit against which the prisoner could draw food and supplies. The aim was to inculcate thrift and a sense of relative values. Maconochie's ingenuity expressed itself also in other penal reforms, such as the employment of music as a reformative agency, provision for the cultivation of gardens by prisoners and the institution of a rudimentary system of inmate self-government. Maconochie's reforms were incorporated by Sir Walter Crofton into the Irish system of reformation and thence with modifications into the American reformatory regime. Maconochie's penal philosophy was: "Restrain men rather by making virtue easy, and good conduct pleasant, than merely by making vice difficult, and misconduct painful." After a brief period in charge of the Borough Prison of Birmingham, Maconochie was removed because the magistrates objected to his opinions as being "too abstract."

SHELDON GLUECK

Important works: *Thoughts on Convict Management, and Other Subjects Connected with the Australian Penal Colonies* (Hobart Town 1838); *Crime and Punishment* (London 1846); *The Mark System of Prison Discipline* (London 1855); *On Secondary Punishment* (London 1848).

Consult: Glueck, S. and E. T., *Five Hundred Criminal Careers* (New York 1930) ch. ii; Carpenter, Mary, *Reformatory Prison Discipline as Developed by the Rt. Hon. Sir Walter Crofton, in the Irish Convict Prisons* (London 1872).

MACQUARIE, LACHLAN (1761–1824), Australian colonial administrator. Macquarie, a Scottish infantry colonel, became governor of New South Wales after the Bligh mutiny of 1808 and ruled the young colony through the important period from 1810 to 1821. He changed the entire point of view regarding the Australian settlements. In his own words, he found a jail and left a colony. The change was partly due to his great material achievements. He restored order after the lax conditions permitted by the naval governors, promoted exploration, opened up the new lands across the Blue Mountains, established a bank of issue and carried out public works on an unprecedented scale. More important, however, was his contribution to the status of the colonists. He argued that the future of the colony lay with free men and that every convict, once he had satisfied his sentence, should start afresh and receive all the rights of free men. This was a revolutionary attitude in a convict colony, where both expirees, who had served their term, and emancipists, who had been released on probation, were viewed as definitely inferior politically, socially and morally. Despite the opposition of officials and free settlers he appointed expirees and emancipists to important offices, including magistracies, and he made a strong fight for the right of emancipist attorneys to practise in the courts of the colony. The Parliamentary Committee on Transportation praised Macquarie's convict policy in 1812, but numerous complaints eventually led the Colonial Office in 1819 to order an inquiry by Commissioner Bigge into the affairs of the colony. Bigge reported adversely on Macquarie's administration, but Macquarie's cause eventually won. Australia became not a jail but an oversea dominion of free men associated on an equalitarian basis.

STEPHEN H. ROBERTS

Consult: Phillips, Marion, *A Colonial Autocracy*, London School of Economics, Studies in Economics and Political Science, no. 16 (London 1909); Jose, A. W., *Builders and Pioneers of Australia* (London 1928) p. 3–35.

MACVANE, SILAS MARCUS (1842–1914), American economist. MacVane was born in Prince Edward Island and graduated from Acadia College in 1865 and after an interval of teaching graduated from Harvard College in

1873. After another interval of teaching he became in 1875 instructor in political economy at Harvard and remained with that institution until his retirement in 1911. He shifted early from political economy to history, becoming assistant professor in the latter subject in 1883 and professor in 1886. His activity as a teacher covered a wide range of work. He taught in straightforward and effective fashion economics, history, international law, constitutional law, modern government, political theory.

All MacVane's work was characterized by sound sense, sober and discriminating judgment, simplicity of statement, wide information but no deep scholarship. His intellectual interests were those of the English don rather than of the German professor. He took an active part in the administrative work of Harvard College and indeed made himself indispensable in some parts of it. In 1890 he published *The Working Principles of Political Economy* (2nd ed. New York 1897) and subsequently in 1899 a translation and revision of Seignobos' *Histoire politique de l'Europe contemporaine*. Among periodical articles were a paper on the "Austrian Theory of Value" in the *Annals* of the American Academy of Political and Social Science (vol. iv, 1893–94, p. 348–77) and a number of articles on theoretic subjects in the *Quarterly Journal of Economics*. The most notable of these latter were those which criticized the economic theories of Francis A. Walker, then recently put forth.

MacVane was clear headed, a good straight reasoner after the fashion of the older school, a keen and dangerous critic, a user and fashioner of old ideas rather than a creator of new ones. In his best work, the debate with Francis Walker in the *Quarterly Journal of Economics*, he showed the weaknesses upon the other side but was not himself free of the weaknesses which ran through the traditional and conservative thought of his time, and advanced matters little. His *Working Principles*, originally designed as a textbook, served its purpose well as a simple yet by no means superficial exposition of the best in the conservative thought of his day.

FRANK W. TAUSSIG

MACY, ROWLAND HUSSEY (1822–77), American merchant. Macy established a shop for fancy goods in New York in 1858 and added a millinery department in 1863. He had added six more departments by 1869 and in 1877 had a total of twenty-one. Although data are scarce, economists tend to believe that American stores were not departmentalized until after 1850 and that widespread adoption of departmentalization began during the panic of 1873. Macy was unquestionably the pioneer in the development of the American department store, but it is difficult to say just how much he copied from the Bon Marché of Paris, which he greatly admired.

Macy adopted the fixed price policy, which was still exceptional, in 1858 and originated the shaded price policy—$1.98 instead of $2.00—in order to prevent thefts by employees. These two policies have come into general use because of their effect on customers. His most striking innovation was cash buying and selling. Few department stores have imitated the policy of buying as well as selling for cash which has been followed by R. H. Macy & Co. with slight modifications for over half a century. To what extent this policy has contributed to the success of the store it is impossible to say; the heads of the firm have maintained that Macy prices are low "because we sell for cash only."

A year after Macy's death the store passed into the hands of C. B. Webster and Jerome B. Wheeler. In 1887 it was purchased by Isidor and Nathan Straus and it is now organized as a corporation controlled and operated by their children.

WINIFRED RAUSHENBUSH

Consult: Hungerford, Edward, *The Romance of a Great Store* (New York 1922); New York *Tribune* (May 1 and 3, 1877); Nystrom, Paul H., *Economics of Retailing* (3rd ed. New York 1930); Doubman, J. Russell, and Whitaker, John R., *The Organization and Operation of Department Stores* (New York 1927).

MADERO, FRANCISCO INDALECIO (1873–1913), Mexican politician. Madero, a member of an influential land and mine owning family, was educated in Mexico, France and the United States. In his political ideas he was a not very remote descendant of the liberal nationalists who had framed the federalist constitution of 1857. He entered politics by supporting local opposition candidates in the decade when Mexico was becoming much concerned with its fate after the aged dictator Díaz should disappear from the scene. The growing economic and political imperialism of the United States augmented this concern. In 1908, when political agitation was stimulated by the president's indication that he intended to restore constitutional government, Madero published a book, *La sucesión presidencial en 1910*, opposing his reelection. It protested against Díaz' establishment de facto of a centralized absolutism which had resulted

in corruption and favoritism in administration; despoilment of Indian lands and enslavement and extermination of the Indians; oppression of labor; neglect of agriculture; mass ignorance and drunkenness; and excessive servility toward the United States. According to Madero, the cynical, corrupt and materialistic despotism weakened patriotic sentiment and menaced national safety. Nevertheless, he was appreciative of the material progress achieved under Díaz, although he attributed it to developments throughout the world. He praised the Porfirian peace, which, he concluded, made possible the restoration of democracy, whose greatest enemy was not the ignorance of the masses but militarism. As neither the dictator nor those who were groomed as his successors could be relied upon to restore the constitution, he called upon Mexicans desiring to maintain the national morale and to avert bloody revolution to organize a political party which should struggle peacefully for the triumph of free suffrage and the principle of no reelection. The book reveals the essentially political and humanitarian character of Madero's thought and suggests but few concrete measures of social reform; before everything the constitution, which represented the national aspirations, must be reestablished. Madero's economic thought consisted largely of an admiration for Díaz' treasury surpluses. He possessed considerable insight into the workings of the dictatorship but he failed to understand the character of the national social structure and the superficiality of the Porfirian peace, during which there developed conditions favorable to intense class and racial struggle.

La sucesión presidencial en 1910 exerted a great influence and its author became the presidential candidate of the Anti-Reelectionist party. He was arrested and Díaz was reelected in July, 1910. Released from imprisonment, Madero proclaimed the revolutionary "plan of San Luis Potosí," dated October 5, which declared the elections illegal and promised the restitution of lands wrongfully taken. In May, 1911, Díaz was overthrown by those who for various reasons opposed the *Científico* regime, by the disinherited who were attracted by the new era envisioned by Madero, and by economic depression. In October Madero was elected president. Once in office the "apostle" of the revolution, idealistic, inexperienced, a poor executive, surrounded by members of his family and other representatives of his class, demonstrated his inability to effect the radical reforms which the masses awaited with impatience. At the same time that the agrarians were alienated, counter-revolutions broke out on behalf of ambitious militarists, landholding elements and foreign, especially American, capitalistic interests. Madero was treacherously overthrown and assassinated; reaction triumphed under Huerta.

MAX LEVIN

Works: *Estudio sobre la conveniencia de la construcción de una presa en el Cañón de Fernández, para almacenar las aguas del río Nazas* (San Pedro, Coahuila 1907); *La sucesión presidencial en 1910* (San Pedro, Coahuila 1908; 3rd ed. Mexico City 1911); *El partido nacional anti-reeleccionista y la próxima lucha electoral* (San Pedro, Coahuila 1910).

Consult: Ramos, Roberto, *Bibliografía de la revolución mexicana*, Monografías Bibliográficas Mexicanas, no. 21 (Mexico City 1931) p. 256–57; Callcott, Wilfrid H., *Liberalism in Mexico, 1857–1929* (Stanford University 1931) ch. ix; Priestley, Herbert I., *The Mexican Nation, a History* (New York 1923) ch. xxiv.

MADISON, JAMES (1751–1836), American statesman. Madison was the inventive genius in the formation of the American political system, and by reason of the influential role which he played in the federal convention has been called the father of the constitution. His classical training as an undergraduate at Princeton was followed by graduate work centering around a minute study of Montesquieu and the reading of Hobbes, Locke, Sidney, Pufendorf and other writers on political science. He was essentially a scholar in politics, blending together vast knowledge and profound insight into human nature.

In the federal convention and in his numerous contributions to the *Federalist* he advocated a system of government in which democracy should be reconciled with the security of private rights. He saw that the central problem of democracy is not the maintenance of equality but the preservation of liberty. Subscribing to Locke's labor theory of property he attributed the sacredness of property rights to their labor origin. Property rights should not overrule personal rights, and thanks to the wide diffusion of property in the United States the power of property to oppress liberty was, Madison thought, a remote contingency. Property at that time was chiefly in the form of land; but Madison foresaw with no little clarity that if other forms of property should arise through the growth of manufactures and commerce, the majority of citizens would become dependent on the wealth of a few and society be divided into a large number

of indigent laborers and a few wealthy capitalists. The extreme individualism with regard to property rights fostered by Madison has been enhanced by the Fourteenth Amendment.

Madison believed that democracy could be reconciled with the security of private rights if the factional spirit could be curbed. But the causes of faction he traced to the nature of man, where latent dispositions are brought into different degrees of activity according to the different circumstances of civil society. Although these causes could not be removed, the control of the effects was within human power. "Enlarge the sphere," said Madison, "and thereby divide the community into so great a number of interests and parties, that in the first place a majority will not be likely at the same moment to have a common interest separate from that of the whole or of the minority; and in the second place, that in case they should have such an interest, they may not be apt to unite in the pursuit of it." Madison's ideal was that of a balanced government as set forth by Montesquieu; the equilibrium of power which the latter had thought necessary to balance the enormous preponderance of royalty in England Madison conceived to be equally essential in the United States as a restraint upon temporary majorities in pursuit of their selfish interests.

As an outstanding anti-Federalist he displayed polemic skill, particularly in his contribution to the Virginia and Kentucky Resolutions of 1798; and along with his collaborator and ever congenial intellectual intimate, Jefferson, helped to carry over into a more complicated era the ideals of agrarian democracy. His later political career as secretary of state under Jefferson (1801–09) and as president of the United States (1809–17) although involving him in many historically significant situations, such as the Louisiana Purchase and the War of 1812, was less productive of systematic ideology.

WILLIAM SEAL CARPENTER

Works: *Writings*, ed. by Gaillard Hunt, 9 vols. (New York 1900–10).

Consult: *The Federalist*, ed. by P. L. Ford (New York 1898); United States, Constitutional Convention, 1787, *Records of the Federal Convention of 1787*, ed. by Max Farrand, 3 vols. (New Haven 1911); Hunt, Gaillard, *The Life of James Madison* (New York 1902); Beard, C. A., *An Economic Interpretation of the Constitution of the United States* (New York 1913); Larkin, Paschal, *Property in the Eighteenth Century* (Dublin 1930); De Leon, Daniel, *James Madison and Karl Marx* (New York 1920); Carpenter, W. S., *The Development of American Political Thought* (Princeton 1930).

MADOX, THOMAS (1666–1727), English archivist and historian. Madox studied law at the Middle Temple but was never admitted to the bar. He was employed as a clerk in the office of the lord treasurer's remembrancer and in the Augmentation Office and in 1714 was made historiographer royal to Queen Anne and King George I. He was one of the official custodians of the national records, and the character of his first book, the *Formulare anglicanum* (London 1702), was determined largely by the nature of the records under his charge in the Augmentation Office. The text of this book consists of a large collection of mediaeval charters; but its peculiar importance lies in its introduction, wherein Madox discussed the structure of such documents in a manner never before attempted and not yet superseded. Madox is in fact the founder of the diplomatic study of the English private charter. His *The History and Antiquities of the Exchequer of the Kings of England* (London 1711; 2nd ed., 2 vols., 1769) was the first detailed history of one of the great English departments of state. In this work Madox submitted the pipe rolls of the twelfth and the early thirteenth century to an analysis which revealed the many sided activities of the mediaeval English Exchequer. It was the starting point for all subsequent research into the administration of England under the first Angevin kings. Although all the continuous records of the Exchequer are now in print down to the year 1198, the *History of the Exchequer* is still of great value as a study of Exchequer practise and as an index to the contents of the unpublished records of this department in the thirteenth century. The third of Madox' chief works, the *Firma burgi* (London 1726), is essentially a study of the financial relations of the English boroughs with the crown, illustrated like the *History of the Exchequer* by extensive quotations from national records, still in great part unprinted; the same method was employed in his posthumously published *Baronia anglica* (London 1736), an inquiry into the legal significance of baronial tenure in England.

Although the whole of Madox' significant work was published after 1700, he is allied in spirit to the great English historians of the seventeenth century and is indeed among the most eminent of that company. He rarely passed beyond the range of the materials which lay at hand in the national records of England, but he always regarded his record work as the illustration of history, which to him was the disinterested reconstruction of the past. The results

of this attitude are that the reputation of his work has suffered little from changes of fashion in historical writing, that it has influenced all subsequent research in related fields and that it still stands as a model of minute investigation in which the details are never allowed to obscure the wider view.

F. M. STENTON

Consult: *Report of the Lords' Committees, Appointed . . . to View the Public Records* (London 1719); Hazeltine, H. D., "Thomas Madox as Constitutional and Legal Historian" in *Law Quarterly Review*, vol. xxxii (1916) 268–89, 352–72; Poole, R. L., *The Exchequer in the Twelfth Century*, Oxford University, Ford Lectures, 1911 (Oxford 1912).

MAFFI, ANTONIO (1850–1912), Italian cooperative leader. Maffi was born in Milan and was self-educated. He engaged in the printing trade and achieved prominence through his abilities as propagandist and organizer. Inspired by Mazzini's idea of "association and liberty" as the solution of social problems, he argued for cooperation and mutualism based upon education, self-sacrifice and solidarity. He condemned the opposition of the ruling class to the peaceful improvement of working class conditions, which he regarded as the only real class struggle, advocating cooperation and mutualism as a constructive remedy and opposing the Marxian idea of class struggle. He helped to indoctrinate the cooperative movement with a class collaborationist philosophy not challenged until 1920, when the movement allied itself with socialism.

The first workman to be elected to the Italian national Parliament, Maffi actively supported ameliorative social legislation, especially in aid of producers' cooperative societies, and was largely responsible for a law empowering workmen's associations to undertake contracts for public works under very favorable conditions. In 1886 he helped promote the first congress of Italian cooperative societies, in which eminent Italian and foreign cooperators took part. The result was the founding of the Lega Nazionale delle Cooperative, of which he was general secretary and presiding genius until his death. He organized the "triple alliance" of cooperatives, mutualists and trade unions for joint legislative action aiming at the legal and economic enfranchisement of workers. Against the view held by many socialists that cooperation was futile he argued that by penetrating all economic and social life and by affecting production, exchange and legislation cooperation could provide a real solution to social problems. His view of cooperation as a powerful instrument of international peace and brotherhood became basic in the International Cooperative Alliance, and he lived to see right wing socialists converted to the cooperative idea.

FELICE MANFREDI

Consult: *Il movimento cooperativo in Italia*, ed. by F. Manfredi (Milan 1920).

MAFIA. The Sicilian word mafia is not found in Italian writings before the nineteenth century. Traina's Sicilian-Italian dictionary (1868) defines it as a neologism denoting any sign of bravado, a bold show; Mortillaro's dictionary (1876), as a word of Piedmontese origin equivalent to gang (*camorra*). Neither definition is exact. The word is employed by Sicilians in two different although related senses: on the one hand, it is used to denote an attitude which until recently has been fairly widespread among certain classes of Sicilians; on the other, it signifies a number of small criminal bands.

Mafia describes the attitude which assumes that recourse to legal authority in cases of persecution by private enemies is a symptom of weakness, almost of cowardice. It is an exaggeration of the sentiment, more or less common in Latin countries, that appeal to law against offenses involving personal insult, for instance adultery, is unmanly and that the duel is the proper means of recovering lost honor. Sicilian circles affected by mafiist psychology held that many offenses must be avenged by personal action or by that of relatives and friends. Common theft, for example, was considered a sign of lack of respect indicating that the thief did not fear vengeance.

The mafiist attitude, of which there were many degrees, was common in western Sicily and almost unknown in the eastern provinces, particularly Messina and Syracuse. It was practically non-existent among educated people as well as among the large class of sailors and fishermen and rare among all urban classes. It was most firmly rooted among peasants and large landowners.

By no means all people with such sentiments were actual or potential criminals. The great majority violated no law. When a person sharing mafiist sentiments had relations with criminals he was usually actuated by a desire to prevent offenses against himself and not to commit them against others. The most serious consequence of such a tendency was the fact that refusal to report offenses to constituted authorities, which

would have been contrary to the mafiist moral law of *omertà*, prevented the capture of criminals by the state and thus facilitated the formation and activities of bands of malefactors.

Mafia was never a vast association of malefactors with a hierarchy of leaders and ramifications throughout Sicily. In this respect it differed sharply from the highly unified Neapolitan Camorra, with which it had no relationship except that of similar criminal objectives. Mafia consisted rather of many small autonomous associations, each active over a limited district. Each association was a *cosca* (Sicilian dialect: *tuft*), generally having a membership of twelve to fifteen, although some were larger. There was no election of chiefs, authority being wielded by members long addicted to crime, who directed the movements of younger associates, superintended dealings with victims and divided booty. Insubordination and especially misappropriation of booty were considered violations of mafiist honor and punished, sometimes with death. The relations between neighboring *cosche* might be cordial or so antagonistic that difficulties would have to be settled by shooting. The great majority of mafiist murders grew out of rivalry between *cosche* or members of one *cosca*. While it is untrue that members of the various *cosche* used conventional words and gestures to recognize one another, they did have peculiar mannerisms, including pronunciations of certain words, frequent use of others, and a certain furtive and shuffling expression. To any experienced Sicilian these betrayed connection with a *cosca*.

The *cosche* engaged chiefly in cattle rustling, extortion and occasional kidnaping for ransom. Often an ally of the *cosca* would offer to recover stolen cattle for the owner, and if such an offer were accepted the cattle would soon be found wandering about the countryside and the "friend" would be indemnified for his "expenses" to the extent of a third or a half the value of the cattle. In regions where agriculture was intensive, a tribute system prevailed. Every landowner or tenant paid to the *cosca* an annual tax higher than the combined imposts of the state, province and commune. Refusal to pay was punished by destruction of trees and vines and the slaughter of livestock. Letters demanding the deposit of a sum of money at a designated place or its consignment to a designated messenger were a method generally used by novices. Kidnaping of wealthy individuals for ransom fell into disuse some twenty years ago because of its difficulty. No woman or baby has been kidnaped for a decade, and no kidnaped person has been killed for three or four. The police have generally suspended efforts to discover the kidnapers until the victim has been freed. A *cosca* through more or less veiled threats would often induce a landowner to entrust the marketing of produce to one of its members or to lease his estate to persons in their confidence. In the first case small thefts by novices not associated with the *cosca* were prevented, a part of the produce being appropriated as payment by the *cosca* itself. In the second case a rebate, often half the lease price, was extracted.

In cattle rustling, the most common offense, two *cosche* collaborated. Stolen oxen and sheep would be dispatched to a commune fifty or more kilometers away, secretly butchered and consumed. Stolen horses and mules were sometimes sent as far as Tunis, where the mafiists had connections with Sicilian emigrants. *Cosche* also have had close relations with criminal bands in the United States whose members were exmafiists. A letter sent from America to a notorious Sicilian mafiist announced a murder committed during its transit. The murder of a New York City police lieutenant, Petrosino, at Palermo in 1909 was perpetrated in cooperation with mafiist criminals in America.

About 1878 Prefect of Police Malusardi, in whom the minister of the interior vested authority over all Sicily, exiled to the coastal islands several hundred criminals against whom precise evidence was lacking. Later, however, the *cosche* reorganized and perfected their methods of operation, and most of their members practised a trade from which they appeared to live. The government was long powerless to stop their crimes. Although the mafiist chiefs were fairly well known, the police could offer no evidence but popular report. Few persons dared appear against the criminals. Even when a chief could be identified he could prove an alibi, and the youths who actually had perpetrated offenses were unknown. When the latter were arrested they rarely informed on those who had ordered them to commit an offense, for they would then not only be condemned but would also forfeit mafiist honor and the help customarily given by the *cosca* to captives of the police.

But the chief obstacle to legal action was the political influence of the mafiists, who in some communes dominated political elections. This power developed after the first important extension of the franchise in 1882 and increased after

universal suffrage was adopted in 1912. The poorest classes, now given the vote, were by no means most largely represented in the *cosche*; but because of ignorance and fear they yielded most easily to mafiist threats and supported candidates endorsed by mafiists. The *cosche* required their legislative tools to obtain for their members permission to carry weapons, to intercede with the police in their favor and to serve them in other ways. The question of public safety in Sicily was repeatedly discussed by the chamber and all ministers of the interior instructed the prefects of police to make no compromise with crime. Most ministers, however, also recommended support of the parliamentary candidacy of a mafiist tool, and the prefects often carried out the second instruction while ignoring the first.

During recent years the mafiist attitude has weakened. Immediately after the World War the general confusion and the ambitions of the younger members of the *cosche* to gain control led to a recrudescence of mafiist activities and a series of murders within the *cosche*. Beginning about 1925, the Fascist government undertook a rigorous war against the mafia. In this struggle it was aided by the weakening of mafiist sentiments resulting from the wider diffusion of culture and of material comforts and the more frequent contacts with the continent which followed upon the improvement of transportation and communication. The government pushed the fight with vigor and success, inducing victims to give sufficient proof to bring about many arrests and convictions. The Fascist system of appointing members of the legislature prevents mafiist influence on elections. Today conditions of public safety in Sicily may be considered normal.

GAETANO MOSCA

See: CAMORRA; BRIGANDAGE; GANGS.

Consult: Wermert, Georg, *Die Insel Sicilien* (Berlin 1905) ch. xxviii; Herz, Hugo, "Die Kriminalität der Mafia" in *Monatsschrift fur Kriminalpsychologie und Strafrechtsreform*, vol. i (1904–05) 385–96; Vaccaro, Angelo, "La mafia" in *Archives d'anthropologie criminelle*, vol. xvi (1901) 49–65; Mosca, G., "Che cosa è la mafia" in *Giornale degli economisti*, 2nd ser., vol. xx (1900) 236–62; Bruno, Cesare, *La Sicilia e la mafia* (Rome 1900); Cutrera, Antonino, *La mafia e i mafiosi* (Palermo 1900).

MAGDEBURG CENTURIATORS. The Magdeburg centuriators, of whom the leader and organizer was Matthias Flacius Illyricus, were the authors of the principal historical work produced by German Lutheranism in the Reformation period. The *Magdeburg Centuries* were planned by Matthias and other strict Lutherans who had gathered in Magdeburg to meet the crisis growing out of Emperor Charles v's attempt to follow up his victory over the Protestant Schmalkaldic League in 1547 and to reestablish Catholicism throughout his entire realm. The centuriators conceived the work as a comprehensive history of the church which should demonstrate that the Lutheran doctrine was the true doctrine and that the Roman papacy had been created and developed by Antichrist. When they had completed an exhaustive investigation of sources in numerous libraries outside of Germany as well as within, they subjected the material to historical criticism and then arranged it by centuries (whence the name). Only the first thirteen centuries of the Christian era were included. The various *Centuries* were uniformly divided into separate sections treating such subjects as church doctrine, ritual, discipline and government, learning, heresies, persecutions and martyrdoms. As a result of its arrangement the work lacks internal unity. Its principal significance for the development of historiography lies in the fact that the centuriators appreciably augmented the volume of hitherto known historical materials and that they applied to the treatment of this material the fundamental canons of humanistic historical method. They manifested due cognizance of the importance of social matters, expounding the relations of the church to society and to non-Christian religious associations as well as to the state; they made exhaustive investigations of the structure of the organizations produced by the church; they evaluated the influence of the Christian precept of brotherly love upon the practise of charity. Never before had such questions been treated in a great and connected church history. In estimating the intrinsic value of the work, however, it must be remembered that it was tendencious in the extreme. The centuriators never permitted their canons of historical criticism to lead them to a judgment adverse to their position. Besides providing an arsenal for Protestant apologists the *Centuries* stimulated and influenced historical writing among Protestants throughout Europe and evoked counterinterpretations from Catholics, such as Baronius. They remained the standard model for Protestant historiography down to the eighteenth century.

KARL VÖLKER

Works: The *Centuries* were first published as *Eccle-*

siastica historia . . ., 8 vols. (Basel 1559–74), rev. by L. Lucius, 3 vols. (Basel 1624). A new edition by S. I. Baumgarten and J. S. Semler covering five centuries under the title *Centuriae magdeburgenses* appeared in 6 vols. (Nuremberg 1757–65). L. Osiander published an abridgment and continuation covering sixteen centuries as *Epitomes historiae ecclesiasticae*, 9 vols. (Tübingen 1592–1604), tr. into German by D. Förter (Frankfort 1597–1608). The centuriators had translated the first four *Centuries* into German, 2 vols. (Jena 1560–65; reprinted Hamburg 1855).

Consult: Schulte, J. W., *Beiträge zur Entstehungsgeschichte der Magdeburger Centurien* (Neisse 1877); Preger, W., *Matthias Flacius Illyricus und seine Zeit*, 2 vols. (Erlangen 1859–61) vol. ii, ch. viii; Baur, F. C., *Die Epochen der kirchlichen Geschichtschreibung* (Tübingen 1852) ch. ii; Janssen, J., *Geschichte des deutschen Volkes*, ed. by L. Pastor, vol. v (16th ed. Freiburg i. Br. 1902) p. 343–69; Fueter, E., *Geschichte der neueren Historiographie*, Handbuch der mittelalterlichen und neueren Geschichte (Munich 1911) p. 249–53; Jundt, A., *Les Centuries de Magdebourg* (Paris 1883); Schaumkell, E., *Beitrag zur Entstehungsgeschichte der Magdeburger Centurien* (Ludwigslust 1898).

MAGIC. The basic ideas that have everywhere underlain magic have been limited. The practise of setting a pattern for the desired event, most frequently by use of analogy, has been omnipresent. A man desires his child to grow, therefore he chews the sprouts of the salmon berry and spits it over the child's body that it may grow as rapidly as the salmon berry. He smears the dust of mussel shells on the child's temples that it may endure as long as mussel shells. A man ties the dried navel string of his baby boy and a woman that of her baby girl to their wrists while they are busy at highly trained occupations, so that the child will have the same proficiency in these techniques. Fish hawk eyes are rubbed over a sleeping baby's lids to give him the fish hawk's sight; and because the raven is supposed never to be sick, the raven's beak is laid by the child that it too may be free of illness. One desires the death of his enemy, therefore he stuffs a bit of the enemy's clothing down a dead snake's throat and ties it with the sinews of a corpse; he puts it in an exposed tree top and the venom of the snake and the contact with the corpse will bring about the death of the enemy.

Any analogy may be used to perform magic. Sometimes, as in Oceania, punning analogies may be employed. Often the analogies are so deeply felt and fundamental in the cultural outlook of the people that they correspond to philosophic conceptions, as in the cases where magic in agricultural practises is based on the analogy between human and plant fertility and sex is conceived to be the mystic correlate of other natural processes. The techniques may be divided into large general categories, such as Frazer's classification under the headings of sympathetic (or homeopathic, or imitative) magic and contiguous magic. They all fall into the category commonly designated as false analogies; these have been the chief reliance of all magic.

The analogies may be carried out either verbally or by imitative actions and are often carried out by both. For instance, the Chukchi of Siberia to keep a dying person alive symbolically transform a little finger into the dying man and hold it tightly in the palm. They also use traditional forms of words to express the analogies of magic; a jealous woman describes her husband as a hungry bear and her rival as the carrion he happens upon and vomits with disgust. Against evil spirits they use a simile of an impregnable ball, and they likewise exploit many other comforting figures of speech. Innumerable rites and ceremonies in all parts of the world have been built up on similar pattern setting analogies.

Magic control may also be exerted by making oneself master of some secret source of power. Egyptian name magic was of this sort; when the magician had obtained the name his control was automatic. A similar idea in primitive magic is found among the Orokaiva of New Guinea, where magic, depended upon in every situation, is strictly owned. The acts and the formulae are common knowledge, but the knowledge of the specific that gives one the power to operate magically is closely guarded. The specifics are usually leaves: a leaf that wilts immediately upon plucking to quiet the waves of a storm at sea; a leaf that grows to tremendous size to put in the water in which newborn domestic pigs are bathed; and others, with no known interpretation by analogy, which are wrapped with a bit of hair from one's enemy or buried with the yams at planting. On islands off the New Guinea mainland, as in Dobu and the Trobriands, it is the form of words constituting the spell that is the secret and guarded source of power. Amulets also usually have traditionally accepted powers, which often do not depend upon conscious analogies.

Magic procedures may be heightened in some areas by concentration, or concentration may be used alone as magic without other techniques. The person who practises the magic orders the event in his mind, with the belief that it will

stage itself in reality in a like manner; the Indians of the north Pacific coast believe, for example, that by concentration they will be enabled to see quantities of dentalia and will thus come into possession of large numbers of these coveted objects.

Magic is essentially mechanistic; it is a manipulation of the external world by techniques and formulae that operate automatically. Frazer names it therefore the science of primitive man. Both magic and science are technologies, capable of being summed up in formulae and rules of procedure. Magic is believed to be, as science is, effective in its own right, in so far as its formulae are letter perfect and its routines have been complied with to the last detail; it conceives the external world to be passive and amenable to human ends as soon as the relevant techniques have been mastered. Yet not magic but the routine procedures of felling trees, knotting fish nets, tempering clay for pottery, are primitive man's literal equivalents for the knowledge classified in modern times as science. For although both magic and science are bodies of techniques, they are techniques directed to the manipulation of two incompatible worlds. Science—and in primitive life the corresponding factual knowledge and command of procedure—is directed toward the manipulation of natural phenomena operating according to cause and effect. Magic is directed toward another world operated according to another set of sequences, toward the world of the supernatural.

It is this aspect of magic which Marett has stressed. From the point of view of the forces it makes use of, the magico-religious world is a fundamental entity whose business is with power, with supercausation not with natural sequences. Marett characterizes magic as religion's disreputable sister, a value judgment that has no more validity than Frazer's opposite one of the self-respecting magician as a master of his technique and of the world, over against the cringing supplicant that religion substituted. The problem is not that of judging between the two modes of approach to the supernatural but of the recognition of the fact that magic and religion, in both Marett's and Frazer's terminology, represent two possible extremes in every type of behavior that deals with the supernatural. Magic is technological and mechanistic, a compulsion of a passive universe to one's own ends; religion is animistic behavior and employs toward a personalized universe all the kinds of behavior that hold good in human relations. In the behavior that centers around an object regarded as powerful there may be at the one extreme the magical amulet that functions automatically, that brings fortune by its mere possession and requires no honor nor humbling of one's self before it. At the opposite extreme there may be the powerful object of the type of the African fetish, which is treated essentially as if it were human; it is talked to, given presents, laid aside to recuperate when it is tired, and the crux of its use is the rapport between the operator and the sacred bundle. In techniques of inducing power by the spoken word there are likewise, on the one hand, the formulae and abracadabra that achieve their end automatically and, on the other, the prayers of the saint who puts himself into intimate relationship with his god. In witchcraft the jinn controlled may come automatically at the rubbing of Aladdin's lamp, or a sorcerer may maintain relationship with the devil that serves because of offerings, intercourse and prostration. Functionally therefore magic cannot be discussed without its complement, religion; they are always alternative techniques for inducing power and for achieving luck by means other than those of the natural cause and effect sequences. A people may have little magic and yet its conduct may be saturated with animistic techniques by which the same sort of supernatural sanction is achieved that in another region is achieved by magical practises. Both the animistic and magical techniques, however, have in common the fact that they rely upon wish fulfilments rather than upon mundane labor in order to attain their ends.

The mental confusion which gives rise to magic is different from that in which animistic beliefs have flourished. The latter result from a lack of distinction between the animate and the inanimate world and a consequent carrying over of human relations into man's dealings with the non-human. Magic, on the other hand, in all its branches is the consequence of a blindness to the essential disparateness of techniques that can be used in dealing with the various aspects of the natural world. It teaches, for example, that a treatment of the sword which has caused the wound will cure the wound, or that milk can be made to sour properly by treating the sacred cowbell. The fallacy involved is the ignoring of the fact that every end in nature has its own techniques by which it can be achieved and the assumption of a mystic sympathy in the external universe by which techniques applied at one point are efficacious at another point.

Progress in control of the universe has always been furthered by giving up pantheistic procedures and limiting techniques strictly to specific ends.

The confusion of thought involved in magic has been emphasized by Lévy-Bruhl as the essential fact in the working of the primitive mind, which he has designated as prelogical in contrast with the reasoning processes of modern man. He concludes from primitive practises in regard to birth and death, omens, dreams, divination, tabu, warfare and curing that primitives do not make logical distinctions. More categorically he contends that in totemism the primitive man does not know himself from the eponymous animal and in relation to the dead he does not know the ghost from the living. It can, however, be shown from the testimony of the most primitive magicians that they are quite able to make these distinctions. They are merely acting upon a basic philosophical creed which, if it were explicitly phrased, would be similar to that of the mediaeval doctrine of the macrocosm and the microcosm which assumes the existence of a mystic sympathy pervading the universe, thus making facts observable or brought to pass in one field significant and operative also in another.

Magical ideas and procedures are plentiful in contemporary civilization. The secularization of modern life has proceeded at the expense of religion and its gods rather than at the expense of magic. Animism and the personalization of the external universe have been banned from sophisticated thinking and children are now induced to outgrow their tendencies in this direction as soon as possible. Comparable advance toward non-supernatural behavior has not been made, however, in the realm of magical procedures. Those who have shaken themselves loose from the trammels of religious tradition often swell the ranks of the various divinatory cults based on the fundamental assumptions of magic —a clientele of Wall Street investors depends upon the verdict of astrologers, and air pilots skilled in the latest triumphs of mechanical science guide their acts by signs. There are innumerable more subtle beliefs in modern civilization that are essentially magical; those that are partially discarded are easier to isolate than those that are still accepted. The traditional American scheme of education is distinctly magical; it does not attempt to draw up a program of what the child will need as an adult and direct its attention to the specific necessary techniques. Its method can be justified only by faith in a magical oneness in the intellectual world; education is regarded as power in the non-naturalistic sense. Modern society is still operating magically with most of the difficult problems that have to do with sex; that is, it does not recognize that there are adjustments and desirable ends in the field of sex which should be achieved apart from all dogmas of revealed religion or traditional morality. Few countries have as yet effectively acted upon the belief that good results in the control of industrial problems or international trade follow only from intelligent and specific procedures accurately adjusted to specific problems. The most characteristic magic of present western civilization is that which centers around property; the violent sense of loss that is experienced by the typical modern in the loss of a sum of money, quite irrespective of whether he and his family will be housed and clothed and fed, is as much a case of magical identification of the ego with externals as any of Lévy-Bruhl's examples of prelogical mentality.

Magic, being essentially only a supernaturalistic rule of thumb procedure, may be either traditionally developed or almost neglected in any field of culture. The contrast between American Indian cultures and those of western Melanesia in this respect is very great. The magic practises of the Kwakiutl are on a level with modern superstitions; they give good luck and are not neglected, but they exist quite apart from the main concerns of the culture. A chief seeking to consolidate his prestige engages in many pertinent activities; he may incidentally employ the services of a proprietor of magic techniques, but his activities are not directed to any great extent by the magic that may be used, nor is it essential that he employ magic at all. The religious practitioner, the shaman, operates not by virtue of magic techniques but because of his rapport with a guardian spirit to which he has not only a personal right through a validating experience but also an inherited right as a member of his family group.

On the other hand, on the island of Dobu, as Fortune has shown, magic practises cover every phase of life and are considered indispensable. There routine procedures are believed to be inadequate in all human activities, and the acquisition of magic is therefore the foremost concern of every ambitious man. It is categorically denied that gardens, the source of the food supply, can grow without magic, despite the fact that the gardens of white settlers have grown

for two generations. The great care given to the gardens is a magical routine to keep a man's yams in his own garden and to lure away as many of his neighbor's yams as his magic can accomplish. Every man's gains are regarded as another man's losses, and magic is the chief reliance in every individual's endeavor to succeed at the cost of his neighbor. A man's harvest from his garden is therefore evidence of his magical prowess and as such is suspect. Harvest is the occasion of most carefully preserved privacy; no one outside the immediate family is allowed to see a family's magically acquired gains. Sex intercourse is likewise regarded as the result of successful magic that gives one power over another man's woman, a conception which is widespread. The asocial nature of Dobuan magic is strikingly illustrated in the use of disease bearing spells in the validation of the ownership of betel nut, coconut palm and other trees. Magic is used also for rain making, for success in economic exchange on the *kula* and in legal actions of all kinds and for causing illness and death to one's opponents. Only in reference to pregnancy do the Dobuans recognize naturalistic causation; they understand it to come about naturally as a result of impregnation. The neighboring Trobrianders have prevented such an anomaly in the general theory of magic; they deny biological paternity and foster a belief which would have brought about a complete consistency in magical world outlook were it found in Dobu. Magic therefore according to the constellation of beliefs into which it enters may be, as in Dobu, a primary concern in social situations and the indispensable guaranty of success or it may be an unimportant adjunct to achievement.

It is not helpful to make clean cut classifications of black and white magic except in cases where the local culture has elaborated a dualism on this basis. The dualism is always possible and has sometimes been made among primitive peoples, but usually magic is not definitely committed either to good or to bad but is used for either as occasion arises. There is no way, for example, to distinguish good magic from the black art in Dobu, where the use of magic for gardens is regarded as achieving yams as spoils and the cures for disease carry with them inalienably the spells that cause it.

The province of magic cannot be regarded as limited to any one field of human behavior. In support of the hypothesis that magic practise is confined to dangerous activities not amenable to matter of fact control Malinowski instances the Melanesians' application of magic to seafaring in canoes, to weather techniques and to pregnancy control. Many other examples could be given of the use of magic in times of peril. On the other hand, a list of occasions in which magic is used without danger being present could also be compiled. One of the characteristic magic practises of Hawaii, for example, was the supernatural consecration of the home, a rite in which the birth of a child was taken as an analogy, a bit of thatch being left free to be cut as the navel cord at the ritual housewarming. The magical procedure in the Toda dairy does not mean that the preparation of sour milk products is more precarious there than it is in other cattle regions where dairying is quite matter of fact, as among the Yakut. Similarly, if danger were the soil of magic one would expect a correlation of magical agricultural procedures with environments difficult for or unsuited to the growing of plants; on the contrary, however, such magic is most luxuriantly developed in the tropical island region of the Papuans, and agriculture was probably never carried on under less hazardous conditions. The contention of Hubert and Mauss that magic is the proscribed use of supernatural power, the illicit over against the accepted, is also an interpretation based on very local conditions and is inadequate in the light of what is at present known of the nature of magic in many primitive regions. On the contrary, it has become evident that the province of magic in human societies is as wide as human desires.

Magic has often been interpreted as a salutary influence in human development. Malinowski has held that magic serves as a remedy for specific maladjustments and mental conflicts in that it "prescribes the adequate idea, standardizes the valuable emotional tone and establishes a line of conduct which carries man over the dangerous moment . . . it supplies most of the co-ordinating and driving forces of labour, it develops the qualities of forethought, of order, of steadiness and punctuality, which are essential to all successful enterprise." Recently Kempf has still further elaborated the argument by holding that magic beliefs "are psycho-therapeutic efforts to make easier the stresses of physiological functioning in a social environment" and that "man grew his cultural ways and beliefs [in magic] in order to control these [physiological] functions, just as the pains of hunger pressed him to hoard food." Any group may use magic, as it may use any sanction, to build up socially desirable activities; and the people

Malinowski is describing, the Trobriands, with their pregnancy magic and their magical treatment of economic exchange in courtship terms, have done so in a decided manner. But a wider survey of the subject merely emphasizes the fact that in such a culture as that of the Trobriands social drives in the use of magic have become stronger than asocial ones. The fact that some societies have used magic for beneficent social purposes must be regarded not as revealing the primary role of magic but as an example of the way in which these societies have been able to direct cultural traits to their special purposes.

Magic has also been held to be a valuable human support as an effective emotional release; it is argued that it has prevented dangerous repressions and made for the health of the social body. This emotional release is evident, for example, in the Chukchi formulae and in the Dobuan realistic imitations of death which accompany the use of a disease charm. No actual killing of the enemy could be so satisfactory in details of vindictiveness as the pre-enactment that is staged in the interests of magic by the Algonquian medicine man. These emotionally satisfying compensations are, however, less common over the world than one would suppose a priori. The techniques of magic are more devious. The emotional satisfaction is by no means direct and vehement; it seems most often swamped in a meticulous observance of petty rules. For the most part, directly because of its character as a mechanical control, magic is cold, technical and non-emotional, a rule of thumb procedure, and it is difficult to regard it as a satisfactory compensatory emotional release.

Freud has emphasized the parallel between the mechanisms of magic and those of obsessional neuroses; both are explained in terms of system formations by which fundamental displacements are achieved that supersede reality for the persons concerned and involve "motor hallucinations" and even "a fundamental renunciation of the satisfaction of inherent instincts." The role of wish fulfilment must be freely admitted; it is a factor not only in the development of magic but in all cultural traits. The world man actually lives in—in the sense of his inescapable necessities and the inevitable conditions of life —always bulks very small in relation to the world he makes for himself. Magic is used to build up these worlds and to give security within them. Nevertheless, magic is only, in Tylor's terms, an occult science and a strong development of occultism may indicate extreme insecurity as often as it indicates security. The yam magic does not give agricultural security in Dobu; on the contrary, it emphasizes a danger spot in the culture and far from minimizing this stress in a community in which food is scarce it institutionalizes it. Security in agriculture seems to prevail under such conditions as exist in the Trobriands, where magic has fastened itself upon other objectives of life and where agriculture is a naturalistic occupation in comparison with its practise in Dobu. Magic potency ascribed to menstruating women or to the dead has not generally inculcated social security in relation to these portents; it has rather indicated the situations which a culture regards as social hazards. The analogy with neurotic behavior is striking; whether or not a culture has chosen to regard women or persons recently dead as supernaturally dangerous, the usual course has been to erect in a neurotic manner an associated edifice of ceremonial by means of which displacement is achieved and the object of dread pushed off the scene or brought back in some more acceptable guise.

The role of magic in institutionalizing fear reactions is especially marked in witchcraft. This is clearest in situations where sorcery as a body of known and recognized magical procedures does not exist but is nevertheless an inescapable fear and a common accusation. The Salem witch trials were evidently of this type, as were the contemporary English anti-witch demonstrations. Primitive cultures, such as that of the Pueblo Indians of the southwestern United States, use witchcraft in analogous ways; the fear of sorcery is a motivation in every situation in life, but no spells or rites actually practised by intending sorcerers have been uncovered, and it seems probable that they do not exist. Even in regions where magic as an objectification of panic is balanced by its use as a control over the external world, the social control it exercises is characteristically through the institutionalizing of a fear neurosis. In Australia, for example, there are traditional techniques associated with the art of "pointing the bone," but its social significance is not so much in the fact that a few old men make use of the practise to inflict punishment as in the fact that it is the social setting for the neurosis of a conviction of death that can rarely be dislodged; entire villages have died in the strength of this conviction.

Thus the contention that magic has had a salutary role in human history must be balanced by facts which present it in a different light.

Far from being an asset it has often been a heavy liability, and its phenomena are analogous to the delusions of grandeur and fear constructs of the neurotic. Its procedures are in psychiatric terminology mechanisms of displacement, and they tend in both primitive and modern societies to substitute unreal achievement for real.

RUTH BENEDICT

See: CULTURE; ANIMISM; FETISHISM; DIABOLISM; DIVINATION; MYSTERIES; FESTIVALS; FERTILITY RITES; CEREMONY; RITUAL; RELIGION; MEDICINE; SCIENCE; METHOD, SCIENTIFIC; SUPERSTITION; MYTH; PSYCHOANALYSIS.

Consult: Goldenweiser, Alexander A., *Early Civilization* (New York 1922) chs. x–xi; Frazer, J. G., *The Golden Bough*, 12 vols. (3rd ed. London 1907–15); Malinowski, B., *Argonauts of the Western Pacific* (London 1922) ch. xvii, and "Magic, Science, and Religion" in *Science, Religion and Reality*, ed. by Joseph Needham (London 1925) p. 19–84; Fortune, R. F., *Sorcerers of Dobu* (London 1931) ch. iii; Hubert, Henri, and Mauss, Marcel, "L'origine des pouvoirs magiques" in *Mélanges d'histoire des religions* (Paris 1909) p. 131–87, and "Esquisse d'une théorie générale de la magie" in *Année sociologique*, vol. vii (1902–03) 1–146; Marett, R. R., *The Threshold of Religion* (2nd ed. New York 1914); Lévy-Bruhl, L., *Les fonctions mentales dans les sociétés inférieures* (Paris 1910), tr. by L. A. Clare as *How Natives Think* (New York 1926); Kempf, E. J., "The Probable Origin of Man's Belief in Sympathetic Magic and Taboo" in *Medical Journal and Record*, vol. cxxxiii (1931) 22–27, 59–62, 118–20; Freud, Sigmund, *Totem und Tabu* (3rd ed. Vienna 1922), tr. by A. A. Brill (New York 1918); Tylor, E. B., *Primitive Culture*, 2 vols. (7th ed. New York 1924) vol. i, ch. iv; Lang, Andrew, *Magic and Religion* (London 1901); Lowie, R. H., *Primitive Religion* (New York 1924); Reinach, S., *Cultes, mythes et religions*, 5 vols. (Paris 1905–23), partially translated by E. Frost (London 1912); Rivers, W. H. R., *Medicine, Magic, and Religion* (London 1929); Beth, Karl, *Religion und Magie* (2nd ed. Leipsic 1927); Thurnwald, Richard, "Zauber" in *Handbuch der vergleichenden Psychologie*, ed. by Gustav Kafka, 3 vols. (Munich 1922) vol. i, pt. ii, p. 291–95; Wundt, Wilhelm, *Völkerpsychologie*, 10 vols. (Leipsic 1911–20) vol. iv; Sumner, W. G., and Keller, A. G., *The Science of Society*, 4 vols. (New Haven 1927), especially vol. ii, chs. xxix and xxxi; Lohr, Max, "Magic" in *Reallexikon der Vorgeschichte*, 15 vols. (Berlin 1924–32) vol. vii, p. 339–43; Danzel, T. W., *Magie und Geheimwissenschaft in ihrer Bedeutung für Kultur und Kulturgeschichte* (Stuttgart 1924); Jevons, F. B., "Magic and Religion" in *Folk-lore*, vol. xxviii (1917) 259 78; Howitt, A. W., *Native Tribes of South-east Australia* (London 1904) ch. vii; Bogoras, Waldemar, *The Chukchee*, Jesup North Pacific Expedition, ed. by Franz Boas, vol. vii, American Museum of Natural History, Memoir, no. 11 (Leyden 1904–09) chs. xiii and xvi; Williams, F. E., *Orokaiva Magic* (London 1928); Rivers, W. H. R., *The Todas* (London 1906); Steinen, Karl von den, *Unter den Naturvölkern Zentral-Brasiliens* (Berlin 1894) ch. xiii; Haddon, A. C., "Magic" in Cambridge Anthropological Expedition to Torres Straits, *Reports*, 6 vols. (Cambridge, Eng. 1901–08) vol. vi, p. 192–240; Murray, M. A., *The Witch-cult in Western Europe* (Oxford 1921); Thorndike, Lynn, *The Place of Magic in the Intellectual History of Europe*, Columbia University, Studies in History, Economics and Public Law, vol. xxiv, no. 1 (New York 1905).

MAGNA CARTA, perhaps the most famous and influential public document in the history of English speaking peoples, had an origin which little indicated its future. King John (1199–1216) had made his rule infamous long before there was thought of forcing him to make a formal grant of liberties. He had broken every obligation which bound an overlord to his vassals in the political feudalism of that time, especially oppressive being his irregular and excessive levies of scutage and aids and his abuse of the feudal incidents of relief, wardship and marriage. His quarrel with the pope over the appointment of the archbishop of Canterbury led to wholesale reprisals against the church in England and alienated that body. The murder of his nephew Arthur, the circumstances of his divorce and second marriage, his treatment of hostages, use of mercenaries and grasping interference with trade made all classes his enemies. It surprises one that this was borne for some fourteen years, but both a leader and an idea had been lacking. The leader appeared in the new archbishop Stephen Langton and the idea through Langton's discovery of Henry I's coronation charter (1100), apparently long forgotten. It seemed apt for the purpose, for it had promised correction of William II's abuses—much like some of John's.

In the period following the Conquest circumstances had led the Norman kings and then Henry II to make more or less formal oral or written promises. Although they were strong kings, it was becoming customary for them to bind themselves to observe sundry parts of the unwritten law. Henry I's charter was the most notable instance; and this was the tradition which Stephen Langton revived. The coalition which forced the charter from John was broader than the feudal groups which had faced earlier kings, since now both the church and London were concerned; and the king could not depend on the middle and lower classes as had his predecessors. All elements feared or hated him more than they did one another. To that extent there was a national rising. The church was in fact first spoken of as the "English church" in John's reign; it was twice so called in the charter,

and it is natural to see in this some reflection of its independent attitude toward the pope and identification with English interests. Moreover the baronage was assuming to speak for the nation; their counsel was the "common counsel of the realm," a phrase used then with rapidly increasing frequency. Through long periods of peace and under masterful sovereigns the nobles had become more landlords than warriors and by both royal command and natural association were being drawn into all sorts of public service. Thus in the army which met John at Runnymede there was a great deal of the feudal uprising to vindicate feudal custom, something of a crusading spirit (their leader was called "marshal of the army of God and of holy church") to guard spiritual rights and some notion of upholding in the "community of the realm" such other liberties as had attained recognized expression.

In the spring of 1215 there had been much experimenting in drawing up lists of liberties and finally on June 15 the triumphant barons presented and John was forced to concede a schedule of forty-eight articles together with a "form of security." In the following days amendments were made and wording was worked out, and on June 19 the scribes completed engrossing the many "originals" distributed throughout England to places of safe deposit. Four of these are still extant, three perfectly legible. Two are in the British Museum and there is one in each of the cathedrals, Lincoln and Salisbury.

The earlier provisions of the Great Charter relate largely to feudal abuses, and the arrangement seems suggested by Henry's charter; but there had been a vast governmental development in the interval and many new circumstances which perforce differentiated John's breaches of law and custom from those of William II and made his charter a new and original document. Moreover it was forced from him, not voluntarily granted—one reason why it was more carefully worded and much longer. The barons did not take this occasion to annul the institutional advances of previous kings, especially Henry II. With but one or two exceptions, where they felt their financial interests invaded, they sought not to destroy but to restore and as far as possible to control. They wished to keep the king from transforming feudal payments into taxes; they laid down the principle that he could not attack freemen or seize their property except on the basis of a court judgment and in the light of a half century of experience regulated the operation of some of Henry II's legal innovations; they limited the powers of sheriffs and coroners; they decreed the ancient liberties to London and other municipalities, renewing the Assize of Weights and Measures and sundry rules touching merchants; they regulated and limited royal amercements, mitigated the forest laws and included emergency measures made necessary by the acts of an incorrigible king. At the end they outlined a clumsy, aristocratic machinery for dealing with John if he should break the charter and as a measure of last resort authorized all in the realm to rise against the king "until redress has been obtained." All this was put in the mouth of the king, and the granting words appear to have been borrowed from land grant charters. There was little thought of the distant future; just enough law was stated to meet the present emergency, the charter being essentially a treaty: the king on his side to keep these promises and barons, clergy and people to continue to regard him as king. The barons and others having a direct hand in the matter acted selfishly, to be sure, but it was high grade, discriminating, constructive selfishness. They made a great document, one that had in it the seeds of a growing greatness.

The treaty did not hold, for John did not intend to keep it. In three months he had obtained a papal release from his oath, it being impossible for Innocent III, who had become John's feudal overlord, to understand the special circumstances which united clergy and nobles in England. The country was plunged into civil war; the council of twenty-five barons to enforce the charter had no chance to function, and John died while the fight was still even. To gain the throne for the boy king Henry III the charter was voluntarily reissued in 1216, the papal legate with the new pope's consent acting with the group of conservative barons who favored John's heir. But sundry provisions were omitted or suspended, and in 1217 a more permanent text was issued with the forest articles in a separate charter. The parent document was soon called the Great Charter in contrast to the smaller forest charter; but ere long it was thought of as great in import rather than in size. It had got by chance a fortunate name. In 1225 there was a third reissue, and from then the texts remained unchanged. These texts were the ones administered in the courts and embodied in the Statute Rolls. The nature of Henry III's rule and sundry episodes in later reigns led to many solemn reissues. Indeed in the fourteenth century it became a

habit for Parliament to demand confirmations. There were pomp and ceremonial, the church pronouncing the greater excommunication upon infringers and the principle appearing that acts contravening the charters were void. Magna Carta had entered on a career of glory and contributed to the dogma of the inviolability of law—law which even kings must keep. Some articles were in wording notably expansible and adaptable and in an uncritical age served well the changing times and problems. It proved a practical document routinely administered in the courts through the thirteenth and fourteenth centuries. Occasionally groups of added articles were issued when it was confirmed, and with it were tenuously associated certain statutes which dealt with the more general principles of public law. After a period of comparative eclipse under Yorkists and Tudors it entered powerfully into the seventeenth century struggle against the Stuart kings and was construed to furnish authority for principles finally embodied in the Bill of Rights. At the same time in the American colonies it was influencing the "fundamentals," "bodies of liberties" and charters which determined the trend of the new governments and was becoming a generic term for documents fundamental to or protective of liberties. It was much cited at the time of the revolution and in connection with the constitution and its adoption. Today we study its history; yesterday it was our political Bible. If it became something of a myth, few would question that the myth has been beneficent—and still is.

ALBERT BEEBE WHITE

See: CIVIL LIBERTIES; BILLS OF RIGHTS.

Consult: McKechnie, W. S., *Magna Carta* (2nd ed. Glasgow 1913); Royal Historical Society, *Magna Carta Commemoration Essays* (London 1917); Adams, G. B., *The Origin of the English Constitution* (New Haven 1912) chs. v–vi; *Chartes des libertés anglaises (1100–1305)* (Paris 1892), with introduction and notes by Charles Bémont; Thompson, Faith, *The First Century of Magna Carta*, University of Minnesota, Research Publications (Minneapolis 1925).

MAHAFFY, SIR JOHN PENTLAND (1839–1919), Irish historian. Mahaffy was from 1864 fellow, from 1869 professor of ancient history and from 1914 provost of Trinity College, Dublin. His earliest writings were devoted to philosophy, his latest to the antiquities of his college, his central and major works to the interpretation of Greek history. Interpretation was to him the main thing. For the laborious collection and establishing of facts he had or seemed to have little patience. Hence his contributions to knowledge were usually presented as impressions or intuitions—matters to be illustrated by examples, in the choice of which he was singularly felicitous, and by analogies, often far fetched. He was apt to be most dogmatic when he was least orthodox; and he was not held back by nice calculations of scholarly self-interest from challenging accepted opinions. He found the Athenians of the great age shockingly cruel and deficient in refinement; he dared to prefer Euripides to Sophocles as a dramatist; he stressed the historical significance of the Hellenistic age. His most valuable productions, his studies in Greek social and intellectual history and his histories of Macedonian Egypt, were for a long time the only works of their kind in English. His treatment was discursive. He had a keen eye for the picturesque and piquant. His criterion of relevance was modern interest. Hence persons, situations and incidents were strongly featured, while the silently moving forces which condition vast social changes were unduly neglected. Mahaffy was a pioneer in his revolt against dry antiquarianism and his rejection of the narrow limits set to Greek experience by ancient and modern classicism. He was among the first British scholars to interest himself in papyrology, but "he was not cut out by nature to be an editor of papyri" and was speedily outstripped by others. Like all pioneer work his is enduring only as such. He was greater as a teacher and personality than as a scientific scholar.

WILLIAM SCOTT FERGUSON

Important works: *Social Life in Greece from Homer to Menander* (London 1874, 7th ed. 1890); *Greek Life and Thought from the Age of Alexander to the Roman Conquest* (London 1887, 2nd ed. 1896); *The Greek World under Roman Sway, from Polybius to Plutarch* (London 1890; reissued as *The Silver Age of the Greek World*, Chicago 1906); *The Empire of the Ptolemies* (London 1895); *A History of Egypt under the Ptolemaic Dynasty* (London 1899); *The Flinders Petrie Papyri*, Royal Irish Academy, Cunningham Memoirs, vols. viii, ix, xi, 3 vols. (Dublin 1891–1905), vol. iii being ed. in collaboration with J. G. Smyly; *A History of Classical Greek Literature*, 2 vols. (London 1880, 3rd ed. 1890–91).

Consult: Hunt, A. S., in *Aegyptus*, vol. i (1920) 217–21; *Hermathena*, vol. xix (1922) v–viii.

MAHAN, ALFRED THAYER (1840–1914), American historian. The son of a professor in the United States Military Academy at West Point, Mahan was an officer in the United States navy from 1856 to 1896 and wrote his major

books while in active service. He wrote brilliantly on technical naval history, constantly drawing political conclusions from his studies. Late in life he supported his arguments for a big American navy with a philosophy of war not dissimilar to that of Bernhardi in Germany. He was a devout Episcopalian and an active leader in foreign missionary endeavor.

His monumental work, *The Influence of Sea Power upon History, 1660–1783* (Boston 1890), and his other writings were the first to go beyond the traditional descriptions of individual naval campaigns or battles interesting only to naval specialists and to examine the political importance of naval strategy and sea power in a manner suitable for lay readers. Although great naval battles had always aroused popular attention, the importance of the slow, cumulative effects of the distant blockade had generally been overlooked by all but actual sufferers from it. As a consequence military invasions and occupations, whose incidents could be observed at close range by many persons, were given undue recognition. Mahan was the first to explain for the lay public the genius of Nelson and other naval commanders who successfully used the strategy of the blockade. In his *The Influence of Sea Power on the French Revolution and Empire, 1793–1812* (2 vols., Boston 1892) he showed how British control of trade routes and British sea power in general frustrated Napoleon's overwhelming strength on land and smashed his plan of an eastern campaign and how all the resounding victories of the French on the European mainland were nullified by the cutting off of sea borne supplies and by the stoppage of ocean commerce.

Mahan's writings were read by statesmen and publicists in all countries and were responsible for a revision of the notions of the governing and politically minded classes on naval questions. They were influential in France and England and helped win public support in Germany for the kaiser's fight for naval appropriations against the opposition of the military party. It is doubtful if the World War would have found America with the third most important fleet in the world had Mahan never set forth his lessons in naval strategy, which also influenced the American demand for naval parity with the British Empire after the war. Although some recent writers in the same field argue that Mahan overrated the value of sea power, his estimate did serve to correct earlier misconceptions; and as an important basis for the ideology of naval expansion his work has been of great significance for recent world politics.

J. M. KENWORTHY

Consult: Kirkham, George K., and Baskerville, T. H., *The Books and Articles of Rear Admiral A. T. Mahan* (New York 1929); Taylor, C. C., *The Life of Admiral Mahan* (London 1920); "Biographisches über Mahan" in *Marine-Rundschau*, vol. xix (1908) 1130–46, with a bibliography; Moireau, Auguste, "La maîtrise de la mer: les théories du Capitaine Mahan" in *Revue des deux mondes*, 5th ser., vol. xi (1902) 681–708; Beard, Charles A., *The Navy: Defence or Portent* (New York 1932) p. 18–21.

MAHMUD II, SULTAN (1784–1839), Turkish statesman. Mahmud came to the throne in 1808 and soon afterward began his program of consolidating the empire and of introducing reforms along western lines. His plans were, however, consistently hindered by the intrigues of the European powers, particularly Russia, by the attempts of Ali Pasha of Janina and Mehemet Ali to carve out independent principalities, by war and by the frequent rebellions of subject peoples.

Convinced of the need of westernizing Turkey, he attempted to wipe out existing abuses and to develop western institutions and customs. Although his measures enjoyed only mediocre success, they prepared the ground and pointed the way for the fundamental reorganization of the country. In Anatolia he deposed the *Dere-beys*, the hereditary local chiefs; in Mesopotamia he reestablished national authority and in Arabia checked the growing power of the Wahhabites. In various ways he succeeded in curbing feudal tendencies.

A new army after the western model was formed and was intended to include the Janizaries, who instigated a serious rebellion as a protest; the annihilation of the Janizaries in 1826, one of Mahmud's chief political achievements, created a sensation and was enthusiastically praised as an "auspicious event" by the reform party. Prussian military instructors were employed and young officers were sent to western European military schools. Nevertheless, the complete transformation of the army was too great a feat to be accomplished in Mahmud's lifetime and for the moment the results were injurious.

Under Mahmud attempts were also made at administrative reform. The central government was rendered simpler and more efficient; a ministerial cabinet similar in type to the European was formed and relations with foreign powers were strengthened by means of perma-

nent embassies. European civilization was zealously cultivated: Mahmud maintained an informal court in Istanbul, introduced European customs and fashions and broke precedent by traveling in the provinces of his empire. He sponsored the publication of two official newspapers; the French *Moniteur ottoman* established in 1831 and the Turkish *Takvimi-vekayih* (Calendar of events) in 1832. Mahmud's subjects were generally unenthusiastic about his innovations; the increased tariff, the monopolization of the sale of coffee and finally Mahmud's monopoly of Asiatic goods caused risings which were put down with bloodshed.

FRANZ BABINGER

Consult: Sax, Karl von, *Geschichte des Machtverfalls der Turkei bis Ende des 19. Jahrhunderts und die Phasen der "orientalischen Frage" bis auf die Gegenwart* (new ed. Vienna 1913) p. 178–274; Iorga, Nicolàe, *Geschichte des Osmanischen Reiches nach den Quellen dargestellt*, Geschichte der europäischen Staaten, 5 vols. (Gotha 1908–13) vol. v, bk. ii.

MAIL ORDER HOUSES. *See* RETAIL TRADE.

MAIMONIDES, MOSES (in Hebrew Mose ben Maimon) (1135–1204), mediaeval Jewish scholar and philosopher. Maimonides, the most outstanding Jewish thinker of the Middle Ages, was born in Cordova, Spain. When this city was conquered by the Almohades in 1148, his family was forced by religious persecution to emigrate; and after long and difficult years of wandering the future philosopher found a new homeland in Fostat, Egypt, where he developed an extensive practise as a physician. In his later years he served as religious head of the Egyptian Jews.

Maimonides had at his command the entire range of mediaeval knowledge and was productively active in a number of fields. Of his medical writings those known as the Aphorisms of Moses and the Treatise on Poisons (translated into French by M. Rabbinowicz as *Traité des poisons*, Paris 1865; and into German by M. Steinschneider, Berlin 1873) and a work on hygiene composed for a son of Saladin enjoyed great prestige in the Middle Ages. But far overshadowing his medical work are his Talmudic and philosophical accomplishments. His works on the Talmud introduced into that field the systematic methods of the science of his day. This systematic tendency may be observed even in his early commentary on the Mishna (written in Arabic, finished in 1168), where he deduces the principles on which the precepts of the Mishna are based. The same trend is present to a much greater degree in his *Mishneh torah* (Recapitulation of the law), also known as *Yad ha-chazakah*. This treatise, written in Hebrew and completed in 1180, is a codification of the entire Jewish religious law, including the juristic, ritual and ceremonial phases, prefaced with a short exposition of the religious and ethical foundations of Judaism. It brings together with exhaustive scholarship all the material scattered in the tortuous discussions of the Talmud and arranges it with the most admirable clarity and comprehension; even today it constitutes the most helpful guide for the study of the Jewish religious law. Materially Maimonides' decisions on Talmudic problems attained the force of authority, particularly in Spain and the Orient; formally his compilation became the guide and starting point for all later codifications.

His chief philosophical work, the *Dalalat al-chairin* (Guide for the perplexed; in Hebrew *More nebuchim*), completed about 1190 (Arabic with French translation published by S. Munk, 3 vols., Paris 1856–66; English translation by M. Friedländer, 3 vols., London 1889), seeks to reconcile Judaism with philosophical truth (identical for Maimonides with the doctrine of Aristotle in the neo-Platonic conception of his Islamic commentators) or rather to demonstrate that they are in essence one. Biblical revelation includes all philosophical truth within itself, and therefore to possess true religion one must comprehend it in its deeper philosophical substance. In order to bring about the synthesis of religion and philosophy it was necessary for Maimonides to remold the Aristotelian system so as to include in it the Biblical concept of a supermundane creative God. With penetrating criticism he thus refutes the Aristotelian argument for the eternity of the world and the neo-Platonic argument for an eternal emanation of the world from God, in order to win a place for the belief in creation. On the other hand, the synthesis demands a thorough rationalization of the Biblical religion. The chief moments of this rationalization are, on the one hand, the philosophical sublimation of the concept of God so as to exclude not only all real anthropomorphisms but also all positive knowledge of God's nature; and, on the other, an intellectualistic concept of the nature and vocation of man, according to which theoretical knowledge is man's ultimate goal and is the means of his coming into relationship with God, immortality being accorded only to the spirit which perfects

itself in theory. The various specific teachings of the Bible are similarly transformed philosophically. Maimonides admits, although with reservations, the "natural" explanation of prophecy developed in Islamic philosophy and puts many of the Biblical miracle narratives under the head of experiences of prophetic fantasy; he also interprets the Biblical laws of worship and ritual only as a means toward the ultimate rational purpose of revelation. For those commandments which permit of no direct rational explanation he applies the historical method of interpretation, regarding them as preventives against pagan ideas and modes of worship.

While these tendencies are to be found also in the earlier Jewish philosophy of religion, Maimonides carried them out with incomparable speculative criticism; and his work became the basis of the entire later mediaeval Jewish philosophy. For three hundred years he was the center of philosophical discussions; although many thinkers exceeded him in rationalistic radicalism, others attacked him precisely for his rationalism. His influence was not merely limited to the philosophy of the schools; his philosophical interpretation of religion became the religion of the educated classes, the basis of a religious enlightenment which penetrated all branches of Jewish literature and which maintained its force despite lively attacks on the part of the strictly orthodox in the thirteenth century and the beginning of the fourteenth. Even in the modern period Spinoza was deeply influenced by Maimonides, and thinkers like Moses Mendelssohn, Salomon Maimon and Hermann Cohen learned to philosophize from him. In the culturally isolated ghettos of eastern Europe the figure of Maimonides long stood out as that of the arch-intellectual and formed the bridge between the Jewish tradition and the secular learning of the West.

Maimonides exerted also a strong influence in Christian philosophy. The great Christian Aristotelians Albertus Magnus and Thomas Aquinas followed him in the building of a theistic Aristotelianism; mystical philosophers like Meister Eckhart and Nicolas of Cusa attached themselves to his doctrine of God; in the Renaissance Jean Bodin professed his religious rationalism and even Leibniz refers to Maimonides for the founding of his religious optimism.

JULIUS GUTTMANN

Consult: Levy, Louis G., *Maimonide* (Paris 1911); *Moses ben Maimon, sein Leben, seine Werke und sein Einfluss*, ed. by W. Bacher and others, Gesellschaft zur Förderung der Wissenschaft des Judenthums, Schriften, vol. xi, 2 vols. (Leipsic 1908–14); Yellin, D., and Abrahams, I., *Maimonides* (Philadelphia 1903); Weiss, I. H., *Dor dor vedorshov* (A history of the oral tradition), 5 vols. (4th–6th eds., Vilna 1904–11) vol. iv, ch. xxvii; Ginzberg, A., *Al parashath derachim* (Collected essays), 4 vols. (Odessa 1895–1913) vol. iv, p. 1–37; Joël, Manuel, *Die Religionsphilosophie des Moses ben Maimon* (Breslau 1859).

MAINE, SIR HENRY JAMES SUMNER (1822–88), English legal historian and political theorist. After occupying the chair of civil law at Cambridge and attaining distinction as a scholar by his *Ancient Law* (1861) Maine served as legal member of the Viceroy's Council in India from 1862 to 1869, returning to England to teach jurisprudence at Oxford and further to explore legal history and theory in a series of books. His wide and subtle understanding of legal and institutional history was derived largely from his knowledge of India and of Roman law, both of which he regarded as indispensable to English juristic study—India as "the great repository of verifiable phenomena of ancient usage and ancient juridical thought" and Roman law as the link between ancient usage and modern legal thought. His works and point of view were enormously influential in English jurisprudence: they served to correct the rigid analytic emphasis of the Austinian school and introduced the historical and comparative methods. To Maine these methods were interwoven: the study of surviving laws and customs—especially those of the East, where, he felt, the western past still lived—could be used as an index of past historical forms. But his was not the superficial and schematic historical method concerned to establish a series of invariable stages of development. He held that there could be "no universal theory attempting to account for all social forms by supposing an evolution from within." His principal concern was with the origins of civilization; he used legal history as an instrument to this end because it furnished the most certain and most illuminating material.

Ancient Law (London 1861; new ed. with introduction by F. Pollock, London 1930; with introduction by C. K. Allen, London 1931), his greatest work, is a study of the earliest ideas of mankind as reflected in ancient law and as related to modern thought. Maine regarded Roman law as a body of tough and technical wisdom worked out by the great Roman jurists, out of which have come such essential modern legal concepts as contract and the will and of which the so-called natural rights of the modern world are

but vague restatements. In analyzing the conditions out of which Roman law arose and the course of its development Maine sought to discover how the crust of custom came to be broken and the combination of order and liberty favorable to civilization secured. Out of this study emerged three generalizations: that in the development of law the sequence is that of judgments, custom and statutes; that the agents of legal change are fictions, equity and legislation; that progressive societies show a development from status to contract. He had a clear grasp of the nature and importance of custom in the development of law and used it to pour ridicule on the insularity and crudities of the English common law teaching. While Maine put the generalization about the progress from status to contract more subtly than would be inferred from his critics, it did suffer from his mistake of taking his own age as final. He saw civilization as mysteriously dependent on freedom of contract: actually, as Maitland and Pound have shown, civilization is more dependent on contract being limited in its scope. Maine further developed his ideas in *Village Communities* (London 1871, 7th ed. 1895), *Lectures on the Early History of Institutions* (London 1875, 4th ed. 1890) and *Dissertations on Early Law and Custom* (London 1883, new ed. 1891), all of them comparative historical studies of the origin of institutions: in the first, basing himself largely on the work of German scholarship, principally that of von Maurer, he showed the analogy between the living institutions of India and those of Anglo-Saxon England; in the last two he worked the Irish Brehon Laws and the sacred legal code of the Hindus into his thesis.

Maine's effect on political thought was chiefly indirect, through his enormous influence on jurisprudence. His juristic ideas had political implications; his historical search for the conditions that had caused the differences between stationary and progressive societies called obviously for contemporary application. In his *Popular Government* (London 1885, 5th ed. 1897) he addressed himself deliberately to this problem as it affected democratic society. He believed that a multitude of ideas on government were, like the legal theories he had attacked, "a set of deductions from the assumption of a state of nature", he aimed to refute easy optimism about the future of democracy by examining its history and actual functioning. The result is a book that may be described as a caricature of *Ancient Law*. The preconceptions underlying both books are the same: that civilization is unusual and must be defended against revolutionary and plausible theories as to the nature of man and his rights. But while in *Ancient Law* this sense of the precariousness of civilization had led Maine to study with technical knowledge and subtle insight the emergence of modern law out of primitive custom, it distorted in the later book his historical study of democracy. The error of mistaking an investigation into origins for a valid criticism of values, which lurks in all his books, is here fatal. The selected facts are a mere decoration for the central assumption that civilization is a technical skill held in trust for the many by the few, a hardly won entity which force created, habit perpetuates and legal skill protects and elaborates.

Maine's work has had considerable importance also for anthropology. *Ancient Law* contains the germs of modern anthropological methods. Even before Morgan, Maine drew the distinction between kinship, or tribal, organization and territorial, or political, organization. He conceived the patriarchal family to be the basic unit of primitive social organization—a view combated by Morgan, Bachofen, McLennan and Lubbock.

K. SMELLIE

Consult: Duff, M. E. Grant, *Sir Henry Maine* (London 1892); Smellie, K. B., "Sir Henry Maine" in *Economica*, vol. viii (1928) 64–94; Allen, C. K., Introduction to his edition of *Ancient Law*, reprinted in *Legal Duties and Other Essays in Jurisprudence* (Oxford 1931) p. 139–55; Vinogradoff, P., "The Teaching of Maine" in *Collected Papers*, 2 vols. (Oxford 1928) vol. ii, ch. viii; Barker, E., *Political Thought in England from Herbert Spencer to the Present Day* (London 1915) p. 161–73; Pound, R., *Interpretations of Legal History* (New York 1923) ch. iii; Graham, W., *English Political Philosophy from Hobbes to Maine* (London 1899) p. 348–415; Tupper, C. L., "India and Sir Henry Maine" in *Journal of the Society of Arts*, vol. xlvi (1897–98) 390–405.

MAISTRE, COMTE JOSEPH MARIE DE (1753–1821), political theorist and social philosopher. In his general point of view de Maistre, the most cogent political theorist writing in French against the secularistic, anti-aristocratic and antimonarchical ideas of 1789, is distinguished from the émigrés by a quality of objectivity which enabled him to see the full significance of the revolution as the dawn of a new epoch. This may be explained in part by the fact that he was Savoyard rather than French by nationality and that as member of the senate of Savoy (1774–92) and later as Sardinian ambas-

sador to St. Petersburg (1803–17) he passed the years of upheaval remote from the actual scene. It was in St. Petersburg that he wrote both his *Essai sur le principe générateur des constitutions politiques* (Paris 1814, new ed. Lyons 1924; tr. into English, Boston 1847) and the famous disquisition on ecclesiastical politics, *Du pape* (2 vols., Lyons 1819; ed. by J. d'Ottange, 1 vol., Paris 1903). The *Essai* stated in the form of general principles and with greater incisiveness the basic ideas previously expressed in his *Considérations sur la France* (Neuchâtel 1796; new ed. by E. Vitte, Lyons 1924), in which he had fully expounded the Catholic traditionalistic position. His posthumously published *Les soirées de Saint-Pétersbourg* (2 vols., Paris 1821; ed. by A. de La Valette-Montbrun, 1924) with its celebrated apologia for the executioner "as the corner stone of human society" presented a mystical philosophy of history but added nothing essentially new.

The keynote of de Maistre's argument was that political and social institutions, being logically and actually anterior to the individual, are not required to justify their relation to the individual before the bar of human reason. The Rousseauistic contract, interpreted either as an actual historical phenomenon or as merely a legal basis for society, was absurd precisely because the individual was inconceivable except within the framework of the social order. The existence of the social order itself must be explained as the result of a superindividual, that is, divine, decree; for even the man of genius, like the great lawgiver of antiquity, was endowed with real creative power only to the extent that he felt himself to be the instrument of a transcendent force. If man would avoid the error of the "trowel which mistook itself for the architect," he must recognize that the function of a constitution was confined to the formulation of relationships, the legality of which rested upon a preexistent sanction. The sole criteria admitted by de Maistre for evaluating a particular social or political institution were the length of time which it had endured and the will of providence. On some occasions he equated the two criteria and on others he assigned precedence to time, "the prime minister of God on earth." But in either case he completely excluded the welfare of the individual, who represented in his philosophy a mere moment in the series of generations. The Catholic side of de Maistre's traditionalism appeared in full relief when he correlated the power of a constitution to endure with the extent to which it was permeated by religious elements. After such an analysis de Maistre was logically prepared to condemn all written constitutions and in particular modern parliamentarism. Although he approved the retention of certain traditional associations, such as estates and guilds, which might act as intermediaries between ruler and ruled and even exercise rigidly circumscribed powers, he countenanced no real check upon the sovereign except the papacy, to which in the event of conflict the people might as a last resort appeal. The pope as representative of God on earth was absolute sovereign, which for de Maistre implied infallibility and complete freedom from conciliar control. Infallibility attached also to the sovereignty of the temporal ruler, but in his case it was only "presumed," while that of the pope was warranted by God.

Because of its admixture of the dogmatic with the empirical the influence of de Maistre's political theory has from the first been restricted. A doctrine which treated the Reformation as merely a different aspect of the error which produced the revolution could naturally gain no footing in Protestant countries. In the Catholic countries it found adherents only in clerical circles, so that de Maistre became immediately marked as a political partisan. It is to be noted, however, that the arabesques of Catholic dogma may be removed without impairing the force of de Maistre's argument that both morally and historically society precedes the individual. This basic positivism, however disguised, explains the influence which the Catholic traditionalist exerted upon Comte through the socialist Saint-Simon and through Comte upon the sociologist Durkheim and the neoroyalists of the Action Française.

PETER RICHARD ROHDEN

Works: *Oeuvres complètes*, 14 vols. (new ed. Lyons 1884–86).

Consult: Cogordan, Georges, *Joseph de Maistre* (Paris 1894); Descostes, François, *Joseph de Maistre avant la Révolution*, 2 vols. (Paris 1893), and *Joseph de Maistre pendant la Révolution* (Tours 1895); Rohden, P. R., *Joseph de Maistre als politischer Theoretiker*, Forschungen zur mittelalterlichen und neueren Geschichte, vol. ii (Munich 1929); Laski, H. J., *Studies in the Problem of Sovereignty* (New Haven 1917) ch. v; Dermenghem, Émile, *Joseph de Maistre mystique* (Paris 1923); Goyau, Georges, *La pensée religieuse de Joseph de Maistre* (Paris 1921); Latreille, Camille, *Joseph de Maistre et la papauté* (Paris 1906); Paulhan, Frédéric, *Joseph de Maistre et sa philosophie* (Paris 1893); Morley, John, *Biographical Studies* (London 1923) p. 165–239.

MAITLAND, FREDERIC WILLIAM (1850–1906), English legal historian and jurist. Coming at Cambridge under the inspiring influence of Henry Sidgwick, Maitland applied himself to the study of philosophy and was bracketed at the head of the moral sciences tripos of 1872. He studied for the bar and engaged in chancery practise but in 1884 returned to Cambridge to a readership in English law, and in 1888 he was elected Downing professor of the laws of England, a chair which he held until his death in 1906. It was Vinogradoff who inspired Maitland to explore the vast collection of original sources for the legal and social history of England which had been preserved chiefly at the Public Record Office. The first fruit of his lifelong research in this field was *Pleas of the Crown for the County of Gloucester* (London 1884), and his next an edition of the manuscript collection of cases which Bracton had formed and used in writing his treatise on the English laws and customs of the thirteenth century, and which Vinogradoff had discovered (*Bracton's Note Book*, 3 vols., London 1887). In his inaugural lecture in 1888, "Why the History of English Law Is Not Written" (*Collected Papers*, vol. i, p. 480–97), Maitland set forth the crucial importance of editing the mediaeval yearbooks and other law sources according to the canons of critical scholarship before the history of English law could be adequately written. As an earnest of his own efforts to this end there appeared his *Select Pleas of the Crown* (London 1888), the first of many volumes of original texts edited by him with valuable introductions for the Selden Society, which in H. A. L. Fisher's words was "the creature of Maitland's enthusiasm." Among his most important contributions to the society's publications were his editions of some of the *Year Books* of Edward II. A decade of such studies equipped Maitland remarkably for writing in conjunction with Sir Frederick Pollock the epoch making *History of English Law before the Time of Edward I* (2 vols., Cambridge, Eng. 1895; 2nd ed. 1899); in the collaboration by far the larger share of the research and writing was Maitland's. In this work Maitland synthesized the results of the detailed research carried on by himself and others. Unflagging he went on to other studies: *Domesday Book and Beyond* (Cambridge, Eng. 1897), *Roman Canon Law in the Church of England* (London 1898), *Township and Borough* (Cambridge, Eng. 1898) and *English Law and the Renaissance* (Cambridge, Eng. 1901). Aside from these books his essays and reviews (*Collected Papers*, ed. by H. A. L. Fisher, 3 vols., Cambridge, Eng. 1911) treat with great brilliance the theory of the trust concept, the corporation (see also his introduction to his translation of a portion of Gierke's *Das deutsche Genossenschaftsrecht* as the *Political Theories of the Middle Ages*, Cambridge, Eng. 1900) and many other subjects.

Maitland was one of the most eminent figures in the intellectual life of his time. He was trained in philosophy as well as in law and history, skilled in palaeography and diplomatics and learned in all the sciences auxiliary to history. His reading knowledge of foreign languages was extensive; and in the introduction to the first volume of his series of the *Year Books* of Edward II he gave an account of the Anglo-French language in the early *Year Books* which has received warm praise from experts. He used these great gifts in the study of original materials for the illumination of the institutional and legal history of England. One of the marked features of his peculiar genius lay in the discovery of the truth of history hidden away in a mass of cold and crabbed documents. His aim was always to present a living picture of the men and institutions of the past. Only the best evidence would satisfy him; and in his hands such sources as *Domesday Book*, the Plea Rolls and the *Year Books* became human documents. But more important even than his capacity to vitalize the past was the fact that he wrote legal history as intellectual history. To him the history of law was primarily the history of ideas; and much of his attention was directed to a search for the origin of the ideas that are decisive in present day legal institutions. It is in this sense that he recommended that history be written backward. His preoccupation with the quest for the origin of ideas led him in his juristic thinking to a genetic and comparative method, but his mind was too fluid ever to be captured by any of the "schools." He wrote in a lucid, nervous style of his own which expressed admirably the elasticity, vividness and subtlety of his mind. Above all, his approach was broad and profound. By envisaging the history of English law as an aspect of the whole stream of English life he brought legal history into close relationship to political, constitutional, social, economic and religious history. His work revolutionized legal history and it has been the most stimulating of all the factors in the recent progress of historical studies devoted to England.

H. D. HAZELTINE

Consult: Smith, A. L., *Frederic William Maitland*

(Oxford 1908), with bibliography; Fisher, H. A. L., *Frederic William Maitland . . . a Biographical Sketch* (Cambridge, Eng. 1910); "Gossip about Legal History: Unpublished Letters of Maitland and Ames," ed. by H. D. Hazeltine and P. H. Winfield, in *Cambridge Law Journal*, vol. ii (1924–26) 1–18; Holdsworth, W. S., *The Historians of Anglo-American Law* (New York 1928) ch. v; Vinogradoff, Paul, *Collected Papers*, with a memoir by H. A. L. Fisher, 2 vols. (Oxford 1928) vol. i, chs. xiii–xiv; Holmes, O. W., Gray, J. C., Saleilles, R., Meyer, P., Brunner, H., Liebermann, F., Redlich, J., and Zocco-Rosa, A., in *Law Quarterly Review*, vol. xxiii (1907) 137–50; Figgis, J. N., *Churches in the Modern State* (2nd ed. London 1914) appendix II, p. 227–65; Gooch, G. P., *History and Historians in the Nineteenth Century* (2nd ed. London 1913) p. 393–99.

MAITLAND, JAMES. *See* LAUDERDALE, EIGHTH EARL OF.

MAJORITY, AGE OF. The period at which the child becomes a man is not fixed in the same way in all types of society. In primitive society the phenomenon of puberty marks the dividing line which indicates the attainment of social majority, the capacity to take part in the ceremonial and social activities of the group. The elaborate ceremonials which follow the reaching of puberty among some races emphasize the social and religious factors. The legal consequences of puberty are incidental, if indeed any differentiation of legal rules has taken place. In matured legal systems the attainment of majority, marking the commencement of full legal capacity, is wholly legal in its nature, a norm arbitrarily posited; its artificiality conceals the non-legal elements of its origin and thus also weakens its legal force.

In mature legal systems the child remains a minor until a fairly advanced age after physical maturity in order to protect him from the consequences of his presumed intellectual immaturity. The interests of society, however, require that certain legal transactions undertaken by the minor should have legal significance. Not only must society be protected against possible criminal action on his part, but the interest in the security of transactions may require that he be held liable for tortious conduct and even for certain contracts.

The variety of method in determining the age of majority has been considerable. The age of majority may be specifically fixed at a period approximating puberty, as in the early Roman law, where it was twelve for females and fourteen for males, or else a maximum limit may be set for children who do not reach puberty at the normal age. Thus the Hanifite school of Islamic law fixed fifteen years for both sexes. Most of the Germanic laws chose the rather early age of twelve for both sexes, which later under the influence of the Roman law was sometimes increased to fifteen. Again, the test of puberty may be completely abandoned and different ages of majority may be adopted for different classes of society. This was typical of feudal Europe. The ages selected often reflected economic motives: in the English law of the eleventh and twelfth centuries a burgess' son came of age when he could count pence, measure cloth and conduct his father's business; or again military motives: a knight's son in England and most of France came of age at twenty-one; sometimes the age selected seems rather arbitrary: fifteen years for the son of one holding in socage tenure in England, fourteen years for a villein's son under many of the French *coutumes*. Finally, a system of graduated majorities or else a single age of majority may be adopted for all classes of society.

The system of graduated majorities is typified in the later Roman law. Persons under the age of seven were *infantes*, *qui fare non possunt*; persons between seven and twelve if females or seven and fourteen if males were *impuberes infantia majores* who required the consent of their tutor for all legal acts which involved the assumption of obligations. After Justinian persons who were no longer *impuberes* but were less than twenty-five years of age required the consent of a curator for certain legal acts, particularly for bringing suit.

Modern legal systems have tended generally to adopt a single age of majority; Germany, which follows in a modified form the Roman rules—under modern German law a minor under seven years of age has no capacity while a minor above that age has ordinarily only a restricted capacity—is the outstanding exception. In England the overshadowing importance of the land law and the operation of the tendency for the law for the higher classes to become the law for all classes of society resulted in the substitution of the age of twenty-one for all persons in place of the feudal scale of ages. Similarly twenty-one became the age of majority for all of France in 1792 (now art. 488 of the *Code civil*). The same course of development as in France preceded the adoption of the graduated scale of majorities in the German Civil Code. A law of the German Empire of 1875 fixed upon twenty-one, superseding the different ages of

majority which prevailed under its various legal systems (e.g. twenty-one in the Bavarian, twenty-four in the Prussian, twenty-five under the German common law). The Swiss Civil Code has fixed the age of majority at twenty.

The relatively advanced age of majority in most modern legal systems may be explained not only by the complex character of modern social and economic relations but by the fact that the attainment of majority normally entails full legal emancipation. It is to be noted that the modern civil law institution of curatorship for adults has not had the effect of making the age of majority earlier than in common law countries where curatorship does not exist. In the Roman law the patria potestas persisted during the whole life of the paterfamilias. In the Germanic laws the child had to leave the paternal abode and establish his own household before the mundium of the father ended. Everywhere, however, it has been found impossible to confine the rules of capacity of minors within the straight jacket of a single relatively advanced age of majority, with the result that traces of the graduated system are practically universal. In all systems some scheme of graduated ages obtains for criminal and delictual liability, and there is often a special age for capacity to make a will. The compulsion to disregard the age of majority in such cases is obvious. Social institutions peculiar to one country may also be important, as, for example, the French rule (unmodified until 1927) forbidding a person under twenty-five to marry without the consent of his parents. In England the forces of competing local borough customs continued for a long time to mar the symmetry of the common law rule. The canon law fixed the capacity of an infant to make a will at twelve for females and fourteen for males and the capacity to act as executor at seventeen. Further many systems provide the possibility of an early attainment of majority; the *venia aetatis* of the Roman law has been influential in this respect. Thus in the Netherlands, where the age of majority is twenty-one, majority may also be attained before then by marriage or by receiving "letters of majority" from the High Court at or after the age of twenty. A limited "emancipation" may also be granted at the age of eighteen.

The rules as to the capacity of minors vary even more widely than those fixing the age of majority. The fundamental divergence lies in the adoption of the Roman conception of guardianship by the civil law countries. Every minor has a guardian—a parent or some other person—who can act for him. In the French system the identification of the civil capacity of the minor with that of the tutor is almost complete, but some acts, such as alienation or hypothecation of immovable property and acceptance or repudiation of an inheritance, may be undertaken only with the consent of the *conseil de famille.*

In the English common law the simple device of guardianship for a variety of historical reasons never received complete development, and from an early date the rules of capacity of minors became greatly complicated. The guardian could not even represent the minor in litigation. The protection which the minor could have found in a developed system of guardianship had to be sought in the crude expedient of the demurrer of the parole, whereby in order to retain the status quo undisturbed all actions by or against an infant were suspended until he should reach his majority. So extreme a principle could not long remain in its pristine rigidity. Yet although it was radically modified it was not discarded. Indeed only the adoption of a fully developed system of guardianship could have destroyed all vestiges of the demurrer of the parole. At an early date the doctrine seems to have become applicable only to rights which the infant claimed through inheritance and not to those which he claimed through his own acts. Later the infant was permitted to acquire and own property and to sue through his "next friend" for money due to himself; he could be made liable for waste, trespass or failure to pay rent. He was not permitted, however, to make an irrevocable disposition of his property. If he attempted to do so, the transaction was not void but it could be disclaimed when he came of age. In the latter part of the sixteenth century the ingenuity of lawyers almost succeeded in killing the last rule. The infant would convey his property by common recovery, appearing in court by his guardian, who would fail to plead infancy. Since the infant was supposed to have a sufficient remedy against his guardian for his failure to plead, the conveyance was allowed to stand as irrevocable. In 1614 Lord Coke ruled that this expedient could no longer be used. Consequently the conception of acts which are voidable although not void still lay ready to hand when the law of contracts was developed. In two main cases, however, the infant was held to be bound—when he made a contract for necessaries and when he acquired an interest in property to which obligations attached or entered into a contract which in-

volved obligations and then took some benefit under the contract.

Thus even in private law the age of majority cannot be viewed as a hard bright line separating the exercise of legal capacity from its non-exercise. In public law its significance disappears almost entirely. The selection of the age of twenty-one as the minimum age for the exercise of the electoral franchise has apparently come about only by analogy with the age of majority, since in many countries a different age requirement for electors is in force. Everywhere graduated systems of age qualification for the holding of public office are to be found.

A. H. FELLER

See: GUARDIANSHIP; CHILD, section on DELINQUENT CHILDREN; JUVENILE DELINQUENCY AND JUVENILE COURTS; FAMILY LAW.

Consult: Bicknell, B. A., *The Law and Practice in Relation to Infants* (London 1928); Bingham, Peregrine, *The Law of Infancy and Coverture* (London 1816); Fère, Victor, *Le mineur, sa condition générale et sa capacité contractuelle dans le droit anglais* (Paris 1923); Holdsworth, W. S., *History of English Law*, 10 vols. (3rd ed. London 1922–32) vol. ii, p. 97–99, and vol. iii, p. 510–20; Solazzi, Siro, *La minore età nel diritto romano* (Rome 1912); Hübner, Rudolf, *Grundzüge des deutschen Privatrechts* (4th ed. Leipsic 1922), tr. from 2nd German ed. by F. S. Philbrick, Continental Legal History series, vol. iv (Boston 1918) p. 54–59, and authorities there cited; El Ghamrawi, M. K., *La protection légale des mineurs en droit comparé* (Paris 1929).

MAJORITY RULE. Whenever a group of persons or of organized bodies is called upon to express a joint opinion or to draw up a joint resolution, the vote of the absolute majority of units—or in a few cases, such as some elections, the vote of the relative majority—is accepted as expressing the thought or will of the entire group. This axiom of collective life, which now prevails among representative bodies, collegiate courts, assemblies and organs of corporations, in plebiscites and elections—everywhere in fact except in strictly intellectual deliberations, where the validity of the conclusion cannot be ascertained by the weight of numbers—is the product of a long evolution and complicated interaction of historical factors. As it gradually became evident at an early stage of societal development that the greater number is also the more powerful physically, the advantages of a device for submitting peacefully to this superior force became increasingly apparent in various primitive groups and ancient states. But before this empiric observation could become crystallized into a general principle it was essential that the particular community should become imbued with the consciousness of its continuous homogeneity and of the potential advantages that the adoption of the principle might confer on the various social groups which might alternately compose that majority.

In the primitive community with its undifferentiated conception of law and its tendency to homogeneous expressions of will the decisions formulated by the elders were submitted for the approval of the populace, which might acclaim or repudiate them either by shouts, as in Sparta, or by the clashing of weapons, as among the primitive Germanic tribes. The transition to a less haphazard technique of arriving at the sentiments of the majority manifested itself in a number of Greek republican states, both aristocratic and democratic, which elaborated various precise forms of voting (*q.v.*). In Rome, where the majority was determined at sight according to the formula *Haec pars major videtur*, a clear differentiation was drawn between bodies, such as the Senate and the comitia, where the decision was taken by the majority and those where one magistrate, as, for example, the tribune, could by his veto thwart the expressed will of the community. The perpetuation of the tradition of majority rule during the Middle Ages was the work almost exclusively of the Catholic church, which in its synods and canonical elections adopted the classical principle, although even the church preferred over a long period of time to place a premium on unanimity as the infallible sign of God's voice rather than to sanction the mechanical superiority of numbers. During the eleventh and twelfth centuries secular Italy exhumed the majority rule along with other Roman traditions and thereafter applied it in very subtle forms, particularly in the Venetian republic. The Teutons and Slavs, on the other hand, were obliged to learn from their own experience the advantages of the device of majority rule and took over little from classical antiquity. The Germans, rooted in a long established tradition of individualism, found it difficult to introduce the technique into the procedure of their communal assemblies and political congresses; so that it was found necessary to impose upon each of the participants in the assembly an oath that he would not interfere with the carrying out of the resolution. The early Slavs, unfamiliar with the device of majority rule, relied entirely upon unanimity, some of them going to the length of beating, expelling and even drowning the dissenting minority.

The speed with which the technique of majority decision was developed in the various countries of antiquity and modern Europe was determined largely by a number of broader social and economic factors. In general it may be said that its application was materially advanced in situations where a common external danger compelled the minority to acquiesce peaceably or where the majority felt compelled by reasons of internal tension, whether economic, religious or political, to insure the effective execution of its decisions. Where the minority was unable to emigrate, the necessity of submission became still more imperative; and where the execution of the majority's decision was entrusted to a strong executive, much of the cumbersomeness inherent in the device was eliminated. The transition to majority procedure was facilitated also by the disappearance of deep social cleavages and by the break up of privileged oligarchic groups, which had hitherto exerted a weight altogether disproportionate to their actual numbers. It should be observed moreover that in the early stages of transition the majority technique was applied almost exclusively to less crucial decisions, which could be carried into execution without arousing active opposition, and that only after it had become thus tested was it extended to such critical spheres as the conduct of war and especially taxation, which continued until a late period to arouse the opposition of privileged individuals or corporations accustomed to immunity from financial obligations. It is likewise true that it first gained vogue among deliberative bodies which were not composed of delegated representatives of a constituency and which had no political prerogatives or executive responsibilities. The clergy gave an example of orderly deliberation to the cities, the cities and the clergy to the nobility, unions of a corporative character to looser organizations. A more immediate stimulus to the spread of the majority rule principle was the separation of the process of voting from that of debate, whereby it was possible to determine the exact personnel of a particular division.

Since the time of the Greeks various observers of this historical process had attempted to formulate and clarify in more scientific terms the issues involved. To Aristotle the practise was justified in that it was intimately bound up with the concepts of liberty and equality, which presuppose even in an aristocracy the possibility of the governed displacing the governing through the medium of the vote. The ideological foundations laid by Aristotle were built upon by the political theorists of mediaeval Europe, who in addition developed with growing intricacy the simple Roman formula: *Quod major pars curiae effecit, pro eo habetur ac si omnes egerint.* The subtlety of many of their formulations, such as *major pars, sanior pars, major et sanior pars, unitas actus* and amendment of a non-unanimous decision by accession of the minority, was simplified in the doctrine of Marsilius of Padua, who was the first to insist that the *valentior pars* constitutes the ruling power in society.

The teachings of the canonists and of the commentators on ancient law and theory were widely utilized. In England during the fifteenth century the kings taught their parliaments to defeat the will of privileged and refractory minorities; the same was simultaneously done by the French kings in their Estates General. Nations which did not adopt the majority rule principle either ceased to be self-governing or opened the way to dismemberment or stagnation. In Spain, for example, the intransigence of the members of the Cortes, who clung to their traditional right of *disentimiento*, was instrumental in fixing upon the country a regime of unrelieved absolutism; the Diet of the Holy Roman Empire, which as late as the seventeenth century still refused to recognize the will of the majority in levying taxes, gradually dwindled as a unifying force. In Switzerland the failure to introduce the majority rule principle resulted in the break up of cantons; majorities were often declared incompetent in religious matters. A chaotic, undisciplined Diet was the cause of Hungary's loss of freedom, and in Poland the same situation had even more tragic results. During the sixteenth century the constitutional principle of *communis consensus* was interpreted in that country as necessitating unanimity in legislation, levying of taxes, elections and communal self-government; only collegiate courts observed the majority rule. Any deputy to the Diet or any country squire in a communal assembly could by his veto frustrate all deliberations, unless they were held under a special "confederate tie." It was not until the eighteenth century that it was realized that the only salvation lay in the adoption of the majority rule principle, but the neighboring states upheld by armed pressure the anarchy and the veto.

In those countries, however, which in the wake of France and England gradually improved the technique of the majority rule compromise this for a time contributed to the making of a strong centralized monarchy. But the new em-

phasis given to the doctrine of majority rule by the successive philosophers of natural law prepared the way for a more thoroughgoing democratic movement, which by 1789 was sufficiently integrated and articulate to challenge successfully the basic premises of the older process. Althusius and Grotius contended that in concluding the original compact society had bound itself to submit to the will of the majority; Hobbes and Locke added that the minority must therefore submit through physical necessity. Vattel and Beccaria conceded, however, that the minority might decide to separate from the community. Rousseau in his *Contrat social* went so far as to hold that in voting the citizen must endeavor to express not his own but the collective will; only thus can he be a free man, for in opposing this collective will he is at fault and should he succeed in imposing his own will he is no longer free. The Polish writer Konarski, a contemporary of Rousseau, without postulating an original compact presents what is perhaps the most convincing demonstration of the vital necessity of government by majority, which grants a perpetual privilege to none and permits an equal share of power to all. Helvétius in his concern for the happiness of the greater number was ready to sacrifice the interests of the minority, thus preparing the way for the arithmetical utilitarianism of James Mill and Jeremy Bentham, which served as the ideological corner stone of government by parties and of electoral reform movements throughout the nineteenth century. Since the French Revolution through its Declaration of Rights proved that by invoking the principle of majority rule authority and tradition can be overthrown, all constitutional life, particularly in republics and democracies, has been based upon the majority principle. This applies also to law courts, the only exception being the English type of jury, which requires unanimous verdicts. Majority rule thus came to be not only a system prevalent in a certain country or an institution or a method of voting but, except in a few quarters (*see* MINORITY RIGHTS), an absolute and generally accepted concept. The idea that as a rule truth, reason and justice are on the side of the majority became the keystone of the democratic credo.

The practical application of this general rule through the medium of the ballot takes various forms and sometimes meets with technical difficulties. A distinction is usually drawn between an absolute majority ($\frac{1}{2}N+1$) and a relative majority (for example, 5 votes against 4 and 3 in a total of 12 votes); sometimes a two-thirds or three-fourths majority is required or, very rarely, the agreement of more than half of all those entitled to vote. As a general rule the absent are not counted, while various regulations treat differently those who abstain from voting. A certain prescribed number of members present, the so-called quorum, is usually sufficient, but even a decision taken without a quorum is valid if it was not questioned before the vote.

Since the aim of majority rule is to record a constant will and not a passing impression, two or three polls, or "readings," are often required. When the question admits of more than one answer and not simply of yes or no, the proposal receiving the smallest number of votes in the first poll is eliminated, and eliminations follow until one of the two remaining proposals can gather an absolute majority—a procedure which has resulted in a tendency on the part of those without a definite opinion to vote rather irrationally for the first proposal presented. In conformity with the example set by England assemblies vote first on the amendments, then on the proposals, it being understood that the adoption of an amendment does not preclude the acceptance by the voters of the entire proposal. These subtleties have come into vogue because it has been learned from experience that many members of assemblies more readily express their negative than their positive reactions at the beginning of a deliberation.

The principle of majority rule in its modern form excludes the veto of the king or of a nonelective body, such as the upper House in England or in pre-war Austria, as it does also electoral categories or classes which confer an advantage upon the aristocracy or plutocracy. All the struggles for an equal, direct, universal and secret suffrage during the nineteenth century were intended to sanction what Herbert Spencer called the divine right of the people, i.e. the absolute domination of numbers. Despite these high hopes, however, genuine majority rule remains for a number of reasons an ideal rather than a reality.

First of all it has been found possible by skilful manipulation on the part of rulers to bring into existence a specious majority, which conforms only in appearance to the actual principles of majority rule. As early as the fifteenth century the French kings found it possible to group the representatives of the people in such a way as always to obtain a majority for their proposals, while at a subsequent stage of devel

opment the democratic politicians of the nineteenth century invented the technique of "electoral geometry" or, as it was called in the United States, gerrymandering. By clever districting of the electoral constituencies this device secured a preponderance of seats for certain parties; each seat was obtained by a narrow majority, while other constituencies received fewer seats, although each of them was supported by a large majority of electors. Similarly the Polish electoral statute secures supplementary seats from a so-called state list, not for the party whose supporters are too dispersed to win them in a particular constituency but precisely for the party which has already obtained a considerable number of seats.

Such devices as these are inspired by the desire to avoid disturbances which would arise from an unbalancing of parties and violent shifts of opinion in the legislative body. Since the representatives of the people have almost without exception shown a tendency not only to legislate but also to rule, they have been forced under many circumstances to unite into blocs so as to obviate the necessity of guessing on the occasion of each ballot the transient desires of their constituents and of forming new groups with every change in opinion. In the representative body the majority seldom holds a ready opinion on a given problem; the groups sharing certain common interests often constitute less than half of the nation, and frequently in an apparently homogeneous group social and intellectual clash with material interests. In order to attain to power therefore those who want protective tariffs, for example, associate with partisans of bimetallism, with opponents of the separation of church and state or with supporters of prohibition and thus form during the elections and later in the legislature a majority composed of many minorities. For this purpose electoral cartels, or joint lists, are formulated whereby one party gives over to the other its surplus votes, and unions of parties appear in the elections under a common name. As a rule, however, these ad hoc majorities tend to break up and reorganize rather frequently.

The more public opinion swings to violent extremes, whether to the right or to the left, the greater is the opportunity afforded to a parliamentary group representing a minority of the total voters to anticipate the direction of the new swing. If, for example, a liberal group obtains a two-thirds majority, a radical wing representing, say, two thirds of that group is able to exercise a virtual domination despite the fact that its members may constitute only four ninths of the total voters in the country. A reactionary minority backed by a moderately conservative majority may likewise attain power. This tendency to non-majority government is aggravated by the fact that a large percentage of electors abstain from voting, so that the result is frequently decided by sections representing less than 50 percent of the population. Thus it has become a practise in some countries, in cases where a special effort is made to verify the will of the majority, such as a popular referendum or veto on fundamental questions, to interpret abstention from voting in a popular veto as tantamount to approval and in a referendum to disapproval.

In order to prevent the distortion and misrepresentation of the collective will in the legislature electoral systems have been devised under which the deliberative body is to constitute an accurate mirror of public opinion or, in the words of Mirabeau, "a geographical map," according to its territorial distribution and with all its variations. Several types and techniques of proportional representation received theoretical support in many quarters during the nineteenth century and within recent years have been increasingly applied in practise.

The majority principle and particularly majority government in its present day political manifestations exert a profound influence on broader social and cultural life. The fight for votes obliges political parties and in many cases non-political organizations to recruit partisans by any means whatsoever, even at the expense of social stability and harmony. A net of electoral propaganda is thrown about those who do not belong to any party and even in highly civilized communities blatant slogans, seductive catchwords, backed by financial resources and a strong electoral machine—sometimes even supported by the administration—are ceaselessly employed to befuddle the calm objective judgment of the voter. In the United States, where there is no "government by majority" in the sense of government responsibility before parliament, the fight for seats has less importance than has the presidential campaign, which is conducted with an eye to the hallowed tradition of "spoils to the victor." If it is true that unreflective partisanship is a regrettable by-product of the majority rule dogma, it may by comparison with the dogma of unanimity, to which Poland, for example, in the old days was willing to sacrifice clear and honest individual judgment, be the

lesser evil. Moreover while striving to secure the government for themselves parties under a system of majority rule learn to forget the minute differences which separate them and to subordinate secondary interests by uniting into blocs, sometimes even by forming larger parties—a process which simplifies the political game while leading the individual voter to give more constructive thought to general issues.

Naturally its Parliamentary Majesty the majority is not capable of dealing with everything. It is quite unfit, for example, to pass upon the intricate details of involved legislation and on the whole merely places an ex post facto public approval or disapproval on measures elaborated in advance by technical experts and lawyers; a complicated law therefore is usually accepted or rejected en bloc. In cases involving delicate issues which might easily compromise the whole party or certain of its members in the eyes of their constituents the parliamentary majority may authorize the government to act by special decrees. For all questions in fact the effective functioning of the majority is inconceivable without a hierarchy of technical and political authorities and a corporate discipline, which at times assumes the form of an openly recognized clique or caucus and at others attempts to disguise the real domination exerted by a secret organization. In the United States exaggerated party discipline changes the House of Representatives into a voting machine; speeches on the floor are for the benefit primarily of the press and of the constituencies and have an insignificant effect on the actual legislative process, which is controlled almost entirely in advance by a small minority composed of congressional committees collaborating with the administration.

The penetration of the majority principle into spheres other than that of parliamentary politics is less deep and at any rate less violent. In regional assemblies the majority rule is less stringently applied, in the first place, because the economic problems which predominate in these assemblies are matters of immediate and general concern and therefore require a compromise and, in the second place, because the decisions of these assemblies instead of being absolute must often be submitted for revision to higher authorities. Unions of liberal professions, compulsory or not, apply the majority principle in cases where their competence is recognized by their statutes; but if membership is not compulsory, the majority must use its power with discretion so as to guard against secession on the part of the discontented. In economic organizations it appears natural that the majority of workers or of union delegates hold negotiations with the employers or decide a strike in the name of the minority as well; but it is less consistent with the pure principle of number when a majority of skilled workers' unions excludes from the advantages of a joint organization the smaller number of unions representing the unskilled workers, who in total numbers may bulk largest in the trade. An extreme caricature of "the greatest happiness of the greatest number" is the adaptation of the majority principle to corporation finance, where a few potentates possessing the preponderance of shares exert unchecked control over hundreds of small shareholders. Generally speaking, in economic life majority rule may lead to disastrous results. The interests of the cities, for instance, are often completely sacrificed to those of the village, or agricultural interests to industrial. Small wonder then that the demand has frequently arisen in these spheres for a transference of the center of gravity of economic decisions from the legislature to other bodies representing directly social and economic groups (*see* FUNCTIONAL REPRESENTATION).

Educational organizations, such as school councils, assemblies of professors and the like, submit to majority decisions on problems of education or administration but not in cases where the majority wishes to express the political or moral opinions of the whole. This is true also of religious organizations and various special associations, in which the majority has a strictly limited competence. Academies and scientific associations in order to prevent accidental majorities from neglecting certain branches of work distribute the funds designed for various purposes according to a proportion established and accepted in advance and require a qualified majority for the introduction of new members.

LADISLAS KONOPCZYŃSKI

See: DEMOCRACY; EQUALITY; UTILITARIANISM; SUFFRAGE; ELECTIONS; VOTING; REPRESENTATION; PROPORTIONAL REPRESENTATION; FUNCTIONAL REPRESENTATION; OBEDIENCE, POLITICAL; MINORITY RIGHTS; PROCEDURE, PARLIAMENTARY; PARTIES, POLITICAL; CONSENSUS; DICTATORSHIP.

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Beschlussfassung in Versammlungen und Collegien (Leipsic 1867); Gierke, O. von, *Das deutsche Genossenschaftsrecht*, 4 vols. (Berlin 1868–1913), part of vol. iii tr. by F. W. Maitland as *Political Theories of the Middle Ages* (Cambridge, Eng. 1900), *Johannes Althusius und die Entwicklung der naturrechtlichen Staatstheorien* (4th ed. Breslau 1929), and "Uber die Geschichte des Majoritatsprinzips" in *Essays in Legal History*, ed. by Paul Vinogradoff (Oxford 1913) ch. xvi; Simmel, Georg, *Soziologie* (3rd ed. Munich 1923) p. 142–47; Baty, T., "The History of Majority Rule" in *Quarterly Review*, vol. ccxvi (1912) 1–28; Starosolskyj, Wolodymyr, *Das Majoritatsprinzip*, Wiener staatswissenschaftliche Studien, vol. xiii (Vienna 1916); Stawski, Joseph, *Le principe de la majorité* (Danzig 1920); Heinberg, J. G., "History of the Majority Principle" in *American Political Science Review*, vol. xx (1926) 52–68; Pirenne, H., "Les origines du vote à la majorite dans les assemblées politiques" in Société d'Histoire Moderne et Contemporaine, *Bulletin*, 4th ser., no. 24 (1924) 456–61; Ruffini, A. E., *Il principio maggioritario: profilo storico* (Turin 1927), "Il principio maggioritario nella storia del diritto canonico" in *Archivio giuridico*, vol. xcii (1925) 15–67, and "Il principio maggioritario nelle elezioni dei re e imperatori romano-germanici" in R. Accademia delle scienze di Torino, *Atti*, vol. lx (1924–25) 392–414, 441–92, 557–74, and *I sistemi di deliberazione collettiva nel medioevo italiano* (Turin 1927).

MALABARI, BEHRAMJI MERWANJI (1853? 1912), Indian journalist and social reformer. As a young man Malabari came under the influence of some Irish Presbyterian missionaries and of Dr. John Wilson, then principal of the Scottish College in Bombay. In 1880 he purchased the *Indian Spectator*, which he edited for more than twenty years, until it was merged with the *Voice of India*. In 1901 he took up the editorship of *East and West*, in the pages of which he described many social evils with a zeal and sincerity that commanded attention throughout the country. Gifted with a crisp and trenchant style and possessing lofty ideals, he laid bare the dark spots in the Indian social organization at a time when the contact with the West had led to the disintegration of the ancient mores and new mores had not yet emerged. He denounced the merchant class in Bombay as lazy and cunning, asserting that the enterprise and honesty which had hitherto characterized all mercantile transactions had disappeared. He showed that despite modern education the people were freely taking part in obscene religious rites and festivals and were acquiescing in the debauchery of the priesthood. Such was Malabari's strong indictment of Hindu society. It was on account of his strenuous efforts in the press and on lecture tours that the Age of Consent Act was passed in 1891. Malabari in fact sowed the seeds of social reform in western India in all directions. In his profound conviction that it is in the middle ranks of life that the materials for a "mighty, puissant nation" are to be found in India, in his exhortation to the people to learn patriotism; to set the nation above caste, creed or race; to give up child marriage; to abjure priestcraft; and to create and organize a new national church founded on the simple tradition of good thought, good word and good deed, Malabari expressed the aspirations and ideals which in the last quarter of the nineteenth century were fashioning a new Hindu society in the crucible of conflict with the Occident.

RADHAKAMAL MUKERJEE

Important works: *Gujarát and the Gujarátis* (London 1882); *The Indian Eye on English Life* (London 1892); *The Indian Problem* (London 1894); *India in 1897* (Bombay 1898); *Bombay in the Making; Origin and Growth of Judicial Institutions in the Western Presidency, 1661–1726* (London 1910).

Consult: Karkaria, R. P., *India, Forty Years of Progress and Reform* (London 1896); Singh, Jogendra, *B. M. Malabari* (London 1914).

MALADJUSTMENT. The concept of maladjustment enters into the social sciences in a great number of forms and disguises. In the applications or arts dependent on the social sciences, such as psychiatry, criminology and social work, it has gained particular recognition and wide vogue. Variety of interpretation and frequent vagueness and even confusion are, however, exhibited in current usage.

Two main types of maladjustment, which may be called respectively technological and psychological, are to be distinguished. In the former the maladjustment falls within a scheme of social organization. The social system is itself in some sense and degree out of joint; its parts are not properly geared together so as to permit the adequate functioning of the whole toward the desired end of its operation. Here maladjustment is interpreted purely in terms of a social mechanism. When, for instance, the economist speaks of overproduction and underconsumption, of a disproportion between producers' credit and consumers' credit, of the excessive control of finance over industry, he is imputing maladjustment in this sense. By an extension of this usage the whole economic system may be impugned as maladjusted, as in the Marxist attack on capitalism, to the underlying conditions of production. It is in the sciences dealing with the technique of social organization—economics, law and government—that the concept

of maladjustment so understood is most in evidence.

Psychological maladjustment has an entirely different reference, although the condition which it designates may be represented as a consequence of technological disequilibrium. Here the maladjustment is attributed not to the social organization as such but to the socially conditioned, limited or repressed personality. Whatever the determinant factors may be, it is the individual who is represented as maladjusted within himself or in relation to his group. By an extension of this usage the smaller group may be thought of as maladjusted within the larger group or with respect to the social conditions which the larger group sustains. In this category the criterion of maladjustment is no longer as in the former the loss of efficiency or service technically realizable but directly the failure of the individual or individuals to attain some norm of behavior. The variability of such norms and the problem of their validity render the second type of concept more precarious.

In a purely physical sense the adaptation of any object whatever, organic or inorganic, animate or inanimate, to its environment may be conceived of as inevitable, universal, complete. In a biological sense adaptation is that relation of the living thing to its environment which admits the persistence of the species to which it belongs. The transition from the biological to the psychological sense occurs when the criterion ceases to be mere persistence or survival, when it is no longer mere living but a way of living which is sufficiently in accord with the individual personality to prevent the development of acute strains and frustrations. This distinction is not clearly observed by those biologists who with ethical intent freely apply the terms natural and unnatural to the conditions and activities of human society. When the issue is one of the conformity of a mode of life to specific socially derived requirements of such a character that the failure to attain them creates an abiding personal disequilibrium, the term maladjustment is superior to the naturalistic term maladaptation. As Sumner, C. Lloyd Morgan and others have pointed out, there is attained in the higher reaches of organic life an area of biological indifference within which alternative modes of life undeterred by sheer considerations of survival are possible. Hence the psychological concept of adjustment cannot be reduced to the biological concept of adaptation.

As this area of indifference grows, as in fact society becomes more elaborate, the opportunities or occasions for maladjustment increase. In primitive life the dominance of habits dependent on the simpler arts of self-preservation and confirmed by the more uniform discipline of life in the small homogeneous group is less conducive to maladjustment in the stricter sense. The savage may be hungry or sick or afraid, but these conditions are merely the contingencies of the scheme of life to which he is adjusted. He may violate or evade the code of his group, but he rarely questions its validity nor is he perplexed within his own milieu by the conflict of codes or standards. He matures within the system of mores into which he is born. The transitions of a society as changeful as it is complex are remote from him. His typical attitude toward the system remains unified and sacrosanct whatever his behavior.

It is quite otherwise in a modern society with its mobility and instability, its impersonal and distant controls, its inconsistent and clashing codes. Technological advances disrupt old habits, scientific discoveries disturb old thought complexes. The near groups of family and neighborhood lose their integrity, their communal quality. The individual grows out of or shakes off their controls as he enters the wider heterogeneous world of modern society. Frequently the emancipation is partial and the process is attended by conflicts, hesitations and doubts. Often, especially in smaller communities, the individual feels the pressure of the mores which he no longer accepts or he loses the assurance of an established order of belief and of life and is thus more at the mercy of circumstance. Moreover the stimulations and opportunities of the larger world have as their counterpart obstacles and frustrations. The economic struggle with its prizes and defeats, the competitive detachment of the individual and the swifter pace of a specialized life create various tensions. This is the setting in which many forms of maladjustment develop. When the transition from one set of habituations to another is sudden and complete, maladjustment is apt to be particularly manifest, as in the case of the soldier returning to peace conditions, the prisoner set loose, the countryman settling in the city, the peasant immigrant in the New World, the oriental thrust into industrialism. But these may be regarded merely as more extreme forms of the disturbances which are inherent in the changeful instability of modern civilization. The symptoms of

psychological maladjustment are most apt to manifest themselves at the crucial ages of the individual's life history, particularly at puberty

Psychological maladjustment has consequently received an increasing amount of attention with a view to the development of practical arts for the mitigation, cure or prevention of the condition and its effects on personality. Various theories have been advanced as to the determining or precipitating factors. While the Freudian school stresses the disturbing effect, deep in the unconscious self, of sex inhibitions, others dwell more generally on the conscious tensions aroused by the conflict between the individual's desires and the restrictive demands of the social order. Some authorities, like Graham Wallas, have found a main source of maladjustment in the artificial character of urban civilization, which balks the inherited dispositions of man, or in the regimentation, monotony and narrow specialization of modern industrial work. Some, like Ogburn, point to the swift changes of a technologically inventive society, which induces nervous excitations and stimulates activities and habits that are unadjusted to the more slowly changing traditions and beliefs which form the cultural background of communal life. Others, particularly socialist authors, give more place to the insecurities of an economic system in which the individual or the detached family unit is subjected to competitive stresses and is at the mercy in respect of livelihood or fortune of precarious conditions far beyond the range of individual control. These various explanations are not necessarily alternative or contradictory but emphasize respectively different factors, the relative significance of which for different social situations requires to be assessed in a more comprehensive aetiology. Before this can be accomplished, however, greater attention must be given to the definition and the diagnosis of maladjustment. The norms to which maladjustment is relative vary with individuals and with groups, and it is futile to attribute maladjustment to those who merely follow different norms from those of their fellows. Maladjustment cannot be identified with such non-conformity and the psychiatrist, the alienist, the educationalist and the social worker must continually guard against such a tendency. It is only when the individual manifests symptoms of personal, or inner, disequilibrium—not when his personality is unified in a behavior discordant with that of his fellows, but when it is distracted by the failure to live his life in accordance with a set of norms valid for himself—that psychological maladjustment can be predicated in any unambiguous sense. Unless this distinction is made, maladjustment remains a confusing and even a dangerous concept, as it implies both that the standards of the average man or of the majority are the measure of socialization and that they constitute the valid standards for all conduct within the group. A similar criticism may be brought against the more philosophical formulations, such as that of Spencer, which make adjustment the goal of living or identify the process of adjustment with progress. As sociologists like von Wiese have held, dissociation as well as sociation is involved in the social process and in the business of living.

This point is of special significance because of the recent development of agencies for the remedial treatment of maladjustment, such as child clinics, psychiatric clinics, sanitaria, reformatories, juvenile courts and special schools. While some types of behavior abnormality can be traced to psychological maladjustment, others may just as plausibly be regarded as expressing the modes of adjustment of variant personalities to their social environment. The case study method, as employed by Thomas, Shaw, Healy, Bronner, Mowrer and others, reveals varieties of behavior response which have been too loosely herded together under the rubric of maladjustment. But it is still not infrequently assumed that all forms of delinquency and criminality are due to maladjustments within the personality of the offender, just as all forms of genius have been explained by another school as a higher expression of mental disequilibrium. The finer analysis made possible by the accumulation of case studies is preparing the way for a more discriminating and limited use of the concept. A difficulty has been the further assumption that there is for every social group one normal mode of life, all deviation from which may properly be treated as maladjustment. This viewpoint is suggested in much of the literature of social work. Maladjustment is the generic category in respect of which the task of social work is most frequently stated by social workers themselves. The Milford conference of social workers, for example, defined this task as "dealing with the human being whose capacity to organize his own normal social activities may be impaired by one or more deviations from accepted standards of normal social life" (American Association of Social Workers, *Studies in the Practice of Social Work*, no. 2, New York 1929,

p. 16). But the recognition that there are variant norms no less than variant abnormalities is necessary if one is to distinguish those abnormalities which can properly be assigned to psychological maladjustment from those which must be diagnosed and treated in other ways.

Since perfect adjustment—if indeed this has any meaning in a changeful society—is never attained, the incessant activity of readjustment is an omnipresent factor of social change, particularly in the more complex civilizations. There are moreover maladjustments which belong to type situations affecting considerable numbers, at times a whole social or economic class. Such group maladjustments are the inspiration of the greater revolutionary movements. Furthermore, while the thesis that genius is ipso facto maladjustment is unacceptable, there is sufficient evidence to suggest that those varieties of genius which find expression in art, in literature, in social reconstruction and in activities of domination are frequently stimulated by a sense of personal maladjustment. In this connection it may be maintained that genius always strives toward a different and a more difficult level of adjustment than that which is sought and found in the ordinary activities of mankind.

R. M. MACIVER

See: ADJUSTMENT; ADAPTATION; ACCOMMODATION; PERSONALITY; MENTAL HYGIENE; PSYCHIATRY; CRIMINOLOGY; SOCIAL WORK; JUVENILE DELINQUENCY AND JUVENILE COURTS; GENIUS.

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MALATESTA, ERRICO (1853–1932), Italian anarchist. After being expelled from medical school for participation in a student demonstration Malatesta took up the trade of electrician. At first a Garibaldian republican, he joined the Italian section of the First International in 1872. After the death of Michael Bakunin, his leader, he was the most active of the anarchist agitators and conspirators, participating in the revolts organized by the Bakuninists in Italy in 1874 and 1877. His life thereafter was an alternation of short sojourns and prison terms in Italy and tours in Europe, Argentina and the United States. Until 1919 his permanent residence was in London.

Although Malatesta founded no distinct school of anarchist thought, as early as 1876 he formulated the theory of what later was called communist anarchism. This was distinct from Bakunin's collectivist anarchism and was to find its chief theoretical exponent in Kropotkin. Malatesta envisioned the revolutionary process as a simultaneous action of all schools opposed to the existing system, leading to the expropriation of the capitalists and landowners. The anarchists would remain in opposition to any government constituted after the revolution and would endeavor by propaganda and example to win the majority to a stateless form of voluntary social organization. Experimentation would resolve differences among the various anarchist schools concerning problems of social organization and economic distribution.

In an endeavor to organize an anarchist-socialist-revolutionary party to prepare an armed revolution Malatesta sought to include anarchists of all schools, but his attempts at organization were opposed by many who saw in them a concession to the authoritarian principle.

Malatesta opposed support of either side in the World War, advocating the termination of the conflict by means of revolutions. In 1919 he returned to Italy and became editor of an anarchist daily newspaper, *Umanità nova*, in Milan. Confronted by the revolutionary situation of 1920 he held that the anarchists could not act without the cooperation of the other anticapitalist schools, since to try to enforce anarchism on the majority—to establish an anarchist dictatorship—would be contrary to anarchist ideology. He was nevertheless arrested in connection with the events of 1920 and entered upon a hunger strike. When his followers attempted terroristic protests against his imprisonment Fascists wrecked the offices of his newspaper. In 1922, when he attempted to publish a daily paper in Rome, his offices were again raided by Fascists. From 1924 to 1926 he published in Rome *Pensiero e volontà*, a theoretical review.

MAX NOMAD

Works: *Propaganda socialista: fra contadini* (Florence

1884, 17th ed. New York 1900), tr. as *A Talk about Anarchist Communism* (5th ed. London 1894); *La politica parlamentare nel movimento socialista* (London 1890); *In tempo di elezioni* (London 1890); *Al caffè* (Paterson, N. J. 1902; rev. ed. Rome 1924); *Il nostro programma* (Paterson, N. J. 1903); *Non votate!* (Mantua 1904); *Il suffragio universale* (Mantua 1904); *L'anarchia* (London 1891), English translation (London 1892). See also his articles in *Pensiero* (Rome 1903–12), and in *Pensiero e volontà*.

Consult: Nettlau, M., *Errico Malatesta vita e pensieri* (New York 1922); Zoccoli, E., *L'anarchia* (Turin 1907); Nomad, M., *Rebels and Renegades* (New York 1932) ch. i; Nettlau, Max, *Anarchisten und Sozial-Revolutionäre*, Beiträge zur Geschichte des Sozialismus, vol. v (Berlin 1931).

MALIK IBN-ANAS (713?–795), Moslem jurist. Mālik is the leading authority of the second of the four schools of law recognized by Sunnite orthodoxy. Most of his life was passed in his native city of Medina, where his interpretations of the legal traditions won him a position of great political importance. When the Alidic pretender Muhammad ibn-'Abd Allāh seized power in Medina in 762, Mālik supported the cause of the rebellion with a legal opinion declaring that the oath of fealty to the Abbasside caliphs was not binding since it was obtained under constraint. For this he was severely punished by the ruling Abbasside. Later, however, he made his peace with the dynasty, and in the year of his death he was visited by the caliph Hārūn al-Rashīd when he passed through Medina.

Mālik came of an educated and influential family, his grandfather and one of his uncles having excelled in the lore and science of tradition. His principal teacher was the jurist Rabī'a ibn-Farrūkh, known for his work in founding a system of law based upon independent rational interpretation (*ra'y*). Mālik himself, though he did not reject this approach in principle and was in fact blamed for following too closely in this respect the position of the Mesopotamian jurists, laid the greatest emphasis upon the idea of anchoring all jurisprudence in religion on the basis of the Koran and tradition. In this way a religious dress was given to what was essentially the customary law practise (Sunna) of old central Arabia and of Medina in particular. The establishment of the fact that a tradition existed on a given point was decisive for Mālik. In the case of conflicting traditions regarding the utterances or manner of life of the prophet he followed the consensus of opinion (*ijmā'*) prevalent in Medina. In such a case there was involved the question as to whether any religious objection had been raised against the given traditional solution.

Next to the infiltration of religio-ethical content into the material of the law Mālik is important because he represented the idea of systematization, although here he is not altogether a pioneer. His life work, the *Kitāb al-Muwaṭṭa* (Delhi 1801), is permeated by the systematic tendency, and although it may not be the oldest code of Islam it attained by far the greatest influence; it had almost canonical authority, displacing contemporary works of equal merit. Obviously compiled in close connection with the author's lectures, the work was published in no fewer than fifteen versions, each differing considerably from the preceding, of which two have come down to us complete and exist in many printed editions.

Probably the best outline of the view of the Malikite school of law is the *Mukhtaṣar* (new ed. of original text by G. Delphin, Paris 1900) of Khalīl ibn-Isḥāq (died *c.* 1374); a complete French translation of the *Mukhtaṣar* by M. Perron was published as *Précis de jurisprudence musulmane . . . selon le rite malékite* (Exploration de l'Algérie . . . Sciences Historiques et Géographiques series, vols. x–xv, 6 vols., Paris 1848–52); an English summary has been made by F. H. Ruxton from the French translation (London 1916). These views became the prevailing school of the western Islamic world. Upper Egypt, the Moslem states along the northern shore of Africa, whose orbit included old Moslem Spain as well as a large section of African Islam to the south, formed the extensive area in which the Malikite code enjoyed validity in practise.

ANTON BAUMSTARK

Consult: Ibn Khallikān, Ahmad, in *Biographical Dictionary*, tr. from Arabic by W. Mac G. de Slane, vol. ii (Paris 1843) p. 545–49; Goldziher, I., *Muhammedanische Studien*, 2 vols. (Halle 1889–90) vol. ii, p. 203–20; Macdonald, D. B., *Development of Muslim Theology, Jurisprudence and Constitutional Theory* (New York 1903) p. 99–103; Bergsträsser, Gotthelf, "Anfänge und Charakter des juristischen Denkens im Islam" in *Islam*, vol. xiv (1924) 76–81; Santillana, David, *Istituzioni di diritto musulmano malichita con riguardo anche al sistema sciafiita*, vol. i– (Rome 1926–); Brockelmann, Karl, *Geschichte der arabischen Litteratur*, 2 vols. (Berlin 1897–1907) vol. i, p. 175–76; Nicholson, R. A., *A Literary History of the Arabs* (2nd ed. Cambridge, Eng. 1930) p. 337, 366.

MALINOVSKI, ALEXANDR ALEXANDROVICH. *See* BOGDANOV, A.

MALKAM KHAN (1833–1908), Persian diplomat, statesman and journalist. Malkam Khan was born of an Armenian Christian family but

was educated among Mohammedans. After completing his studies in Paris he returned to Persia and toured the country as a conjurer. He offended the religious feelings of the population and was ordered to leave the country. He returned again a few years later to found a Masonic lodge, Farámush Khánah (The place to forget), but the shah, afraid lest it become a conspiratory organization, closed it and asked Malkam Khan to leave the country for the second time. For a while he served as Persian ambassador in London. On February 2, 1890, he began to publish a Persian newspaper in London called *Qānūn* (Law). The initial motive of the paper was personal resentment against the shah and his ministers, its editorials assuming that everything in Persia could be improved by a mere change of cabinet. The original personal motive was, however, soon forgotten and Malkam Khan became the leader of the radical opposition to the old regime. The *Qānūn*, of which forty-one numbers appeared in three years, criticized severely the arbitrary and lawless regime of the shahs, the backwardness of the country and its domination by the religious leaders and demanded a constitutional form of government and a new code of law. Malkam Khan received the support and cooperation of the famous Islamic reformer, Jamāl al-Dīn al-Afghani. Copies of the paper were smuggled into Persia despite a strict censorship and were passed secretly from hand to hand for many years after their publication. The *Qānūn* was the most important single factor in introducing liberal rationalistic ideas into Persia and in initiating a strong nationalist movement.

AHMET EMIN

Consult: Browne, E. G., *The Persian Revolution of 1905-1909* (Cambridge, Eng. 1910); Sykes, Percy, *A History of Persia*, 2 vols. (2nd ed. London 1921).

MALLET DU PAN, JACQUES (1749–1800), Swiss political and social critic. Mallet du Pan, the son of a Calvinist pastor, studied at Geneva, then one of the most brilliant centers of political science in Europe. Abandoning the academic sphere for the more exciting career of publicist he collaborated with Linguet in the famous *Annales*. In 1783 he founded independently the *Mémoires historiques, politiques et littéraires sur l'état présent de l'Europe*, a suitable vehicle for a polyglot and cosmopolitan with an intimate knowledge of past and present European affairs. The *Mémoires* became merged with the *Mercure de France* and from 1788 until 1792 Mallet acted as political director of this important journal, which during the first two years of the revolution was an organ of the aristocratic adherents of constitutional government. Linguet's awareness of the preeminent importance of the social substructure of the state he carried into the revolution, convinced that political authority was necessarily founded on force and on the economic subordination of the lower classes. As early as 1788 and 1789 he pointed out the essential issue of the crisis—the struggle of the third estate against the privileged classes. After the outbreak of the revolution he advocated, like Mounier and Clermont-Tonnerre, the establishment of a bicameral system, in which a lower chamber representing the third estate should have certain restricted powers alongside a strong monarch and an upper aristocratic house. But from 1791 on he veered steadily toward the extreme right, and in May, 1792, represented Louis XVI in a secret mission relative to the intervention of the German princes in the king's behalf. After August 10 he became an émigré, residing in Switzerland until the French invasion, when he fled to Germany and thence in 1798 to England. There during the last two years of his life he edited the *Mercure britannique* (1798–1800).

One of the few émigrés who retained some capacity for objective judgment, Mallet was an important observer and critic of the revolution. Despite a blinding hatred of the revolutionary changes, especially in the social and economic sphere, he sensed the overpowering vitality of the movement, the sources of which he analyzed in *Considérations sur la nature de la Révolution et sur les causes qui en prolongent la durée* (Brussels 1793; English translation, London 1793). He contrasted the galvanic force of the democratic uprising with the passionless attitude of the antirevolutionary coalitions, which were fighting a war from which the "moral springs had been removed." He criticized the European governments for their lack of political wisdom in proclaiming their intention to effect a complete restoration of the old regime in France and pointed to the new social facts, such as the existence of a new class of property holders, which should influence the settlement of French affairs after the revolution. His program was essentially the compromise adopted by the Restoration government in 1814. While other émigrés reacted violently against reason and individualism, Mallet continued to uphold the right to think freely. In opposition to the "plot" theory of the revolution, which most of the émigrés eagerly

embraced, he pointed out the inexorable logic underlying the causes of events; frequently he played the prophet. Like Joseph de Maistre and a few other publicists he viewed the revolution as a drama in which foreordained catastrophes were unfolded and detected in its course the "finger of God." This theory found much favor with later determinists, particularly with the philosopher and historian Hippolyte Taine, who lauded Mallet's insight and attached much value to his writings.

PHILIPPE SAGNAC

Other works: Some of his papers have been collected as: *Correspondance politique pour servir à l'histoire du républicanisme français* (Hamburg 1796); *Lettre à un ministre d'état sur les rapports entre le système politique de la République française et celui de la Révolution* (London 1797); *Essai historique sur la destruction de la ligue et de la liberté helvétique* (London 1798), English translation (Boston 1799); *Mémoires et correspondance de Mallet du Pan pour servir à l'histoire de la Révolution française*, ed. by A. Sayous, 2 vols. (Paris 1851), English translation (London 1852); *Correspondance inédite de Mallet du Pan avec la cour de Vienne 1794–1798*, ed. by A. Michel, 2 vols. (Paris 1884); *Lettres de Mallet du Pan à Saladin-Egerton 1794–1800*, ed. by V. Berchem (Geneva 1896).

Consult: Mallet, B., *Mallet du Pan and the French Revolution* (London 1902); Descostes, F., *La révolution française vue de l'étranger, 1789–1799* (Tours 1897); Vallette, G., *Mallet du Pan et la Révolution française* (Geneva 1893); Cunow, H., *Die Parteien der grossen französischen Revolution und ihre Presse* (2nd ed. Berlin 1912) p. 169–76; Baldensperger, F., *Le mouvement des idées dans l'émigration française 1789–1815*, 2 vols. (Paris 1924).

MALLINCKRODT, HERMANN VON (1821–74), German publicist and politician. Mallinckrodt was the son of an aristocratic Westphalian landowning family. As early as 1848 Catholicism and romantic currents inspired in him strictly conservative political views. After studying law he was active in the Prussian administration, at first as burgomaster of Erfurt; he entered politics in 1852 as Westphalian deputy to the Prussian *Landtag*, where except for a period of four years he sat until 1863. Mallinckrodt thenceforth led the most outspokenly Catholic and conservative wing of the Center, for which his stirring speeches and numerous articles, especially in the *Westphalischer Anzeiger*, did much to win mass support.

He championed Catholicism against the attempt of von Raumer, Prussian minister of ecclesiastic affairs and education, to interfere with the church's independence. In the *Landtag* he joined the new *Katholische Fraktion* and soon became one of its leaders by virtue of his knowledge of administrative questions and his deep moral passion. Looking toward final goals he followed the *Fraktion* into its alliance with the liberals against the government despite his conservative views. But when in 1859 the government passed from the hands of the *Junker* into those of the moderate liberals, he opposed the abandonment by the Catholic party of its name or of its aggressive policies; he held that to become the *Fraktion des Zentrums* would obliterate essential characteristics.

A legitimist and an advocate of Austro-German union, he opposed the war of 1866 and the resulting annexations. In 1867 he was elected on a clearly ultramontanist platform to the Diet of the North German Confederation, where he joined other adversaries of Bismarck in the federal constitutional association; here he became acquainted with Windthorst. Mallinckrodt's aim was to limit federal in favor of state power. On its establishment in 1870 he became a leader of the Center party, again insisting that its Catholic character be reflected in its name.

LUDWIG BERGSTRÄSSER

Consult: Schmidt, Franz, *Hermann von Mallinckrodt* (2nd ed. Munich 1921); Pfülf, Otto, *Hermann von Mallinckrodt* (2nd ed. Freiburg i. Br. 1901); Bachem, Karl, *Vorgeschichte, Geschichte, und Politik der deutschen Zentrumspartei*, vols. i–viii (Cologne 1927–31).

MALLOCK, WILLIAM HURRELL (1849–1923), English publicist. The author of poems, novels and controversial works on religious and social questions, Mallock was known principally for his attacks on religious liberalism and on the democratic and collectivist trends in politics. His general social conservatism appeared in *The New Republic* (2 vols., London 1877; 2nd ed. 1877), a novel satirizing prominent publicists and literary men of the day, the first of his works to attract wide attention. Throughout his later works runs the doctrine that the reins of economic and political control lie properly and inevitably in the hands of minorities distinguished by superior brains and character. The reliable signs of these excellencies are to be found in economic success and social position, as these marks of distinction appear in a society where private property in its traditional legal forms is vigorously protected and free competition generally unrestrained by government and where political privileges are allotted on the basis of wealth and education. He contended that the increase in per capita wealth during the past century had been due almost wholly to the skill and diligence of financiers, industrial entrepreneurs

and inventors. The laborer, he argued, could by his efforts alone produce no more than he did a hundred years earlier.

Mallock's clear, epigrammatic style and agile use of factual detail attracted a considerable following, although professional statisticians attacked his work. He recognized no need to prove basic generalizations, which were for him assumptions indispensable for the discussion of political and economic policy; and although he criticized many evils of democratic society he was lacking in concrete proposals of alternatives. He was an important force in contemporary antisocialist propaganda.

FRANCIS W. COKER

Important works: *Social Equality* (London 1882); *Aristocracy and Evolution* (London 1898); *A Critical Examination of Socialism* (London 1907); *The Limits of Pure Democracy* (London 1918).

Consult: Shaw, Bernard, *Socialism and Superior Brains: a Reply to Mr. Mallock*, Fabian Tract, no. 146 (London 1909); Smith, Charles D., *Natural Monopolies in Relation to Social Democracy* (London 1909); Rockow, Lewis, *Contemporary Political Thought in England* (London 1925) ch. iv; Hobson, John A., "Mr. Mallock as Political Economist" in *Contemporary Review*, vol. lxxiii (1898) 528–39; De Leon, Daniel, *Marx on Mallock* (New York 1908).

MALMSTRÖM, CARL GUSTAF (1822–1912), Swedish historian. Malmström became professor at the University of Uppsala in 1877 and was also head of the Swedish Record Office for five years beginning in 1882. He was a member of the cabinet from 1878 to 1880 but played no political role. His fame rests chiefly on his great work *Sveriges politiska historia från konung Carl XII's död 1718 till statshvälvningen 1772* (The political history of Sweden from the death of Charles XII in 1718 to the revolution of 1772, 6 vols., Stockholm 1855–77, new ed. 1893–1901), which is considered among the most excellent of Swedish historical writings. Based on a careful study of the rich documentary material, it gives for the first time a comprehensive account of the troubled period in Swedish history known as *Frihetstiden* (the age of freedom), which was characterized by unlimited parliamentary power following as a reaction from royal autocracy. Malmström gives a detailed account of the economic and social development of the country in this period and analyzes with great clarity the struggle between the political parties as well as the obscure relations which existed between the political leaders and the foreign powers that threatened Sweden's independence. He is neither brilliant nor profound, but his account of events fascinates through its clarity, simplicity and absence of rhetoric. Because of its subject and Malmström's treatment the work is exceedingly instructive, especially in view of the similarity between the political life of *Frihetstiden* and that of present day Sweden.

Malmström was a man of the old school, conservative, loyal and earnest, who considered the health of the state essential for the welfare of a nation. He was one of the first Swedish historians to master modern historical technique and always endeavored to avoid subjective judgments and constructions. He was one of the founders of the Swedish Historical Society, of which he was chairman for many years, and he exerted a strong influence on the younger school of historians.

LUDVIG STAVENOW

Consult: Stavenow, L., in *Historisk tidskrift*, vol. xxxii (1912) 217–21; Schück, H., in Svenska Akademien, *Handlingar*, vol. xxv (1914) 111–49.

MALNUTRITION. *See* NUTRITION.

MALON, BENOÎT (1841–93), French socialist. Malon, the son of a peasant, worked as a shepherd and farm hand; in 1865 he went to Paris, where he worked as a dyer in a factory and obtained some education in evening courses. His membership in the First International, which he joined in 1866, cost him two terms in prison but gained him a certain notoriety. On February 8, 1871, he was elected to the National Assembly, from which he resigned simultaneously with Henri Rochefort after voting against the peace treaty. He was a member of the important Commission of Labor, Industry and Trade of the Paris Commune, struggled up to the last day of the insurrection and then fled to Switzerland. He returned to France with the amnesty of 1880 and was with Jules Guesde one of the founders of the *Parti ouvrier*. Malon founded the monthly *Revue socialiste* in 1885, to which he devoted all his efforts until his death. He was the author of approximately twenty volumes of socialist propaganda and popularization.

In 1885 he separated from the *Parti ouvrier* and founded an independent socialist party occupying a theoretical position opposed to Marx and Guesde and closely akin to the more famous German revisionists. Malon considered the economic materialism of Marx to be narrow and formulated a theory of social evolution which postulated the ideals of justice and pure law as

effective basic forces. He argued that humanity carries in itself such preconceived ideals and pursues them from civilization to higher civilization, moving under their obscurely felt influence. He opposed to the revolutionary strategy of the Marxists the reformist method ("possibilism") and looked to universal suffrage and the aid of enlightened bourgeois elements to make revolutionary tactics unnecessary. While Malon is closely linked to the history of the Commune and of French socialism he exercised slight influence on the French labor movement in general.

ALEXANDRE ZÉVAÈS

Important works: *La troisième défaite du prolétariat français* (Geneva 1872); *La question sociale, histoire critique de l'économie politique* (Lugano 1876); *Le nouveau parti*, 2 vols. (Paris 1881–82); *Histoire du socialisme*, 5 vols. (Paris 1882–85); *La morale sociale* (Paris 1886, new ed. 1896); *Le socialisme intégral*, 2 vols. (Paris 1890–91, 3rd ed. 1892).

Consult: Spuller, Eugène, *Figures disparues, 3ième série* (Paris 1894) p. 233-51; Peyron, Élie, "Benoît Malon" in *Revue socialiste*, vol. xxxiii (1901) 257–88.

MALTHUS, THOMAS ROBERT (1766–1834), English economist, sociologist and utilitarian moralist. Malthus' entire social and economic thought may be said to center about his theory of population. According to this theory population when unchecked increases at a rate so much more rapid than it is possible to increase food supply that numbers are constantly pressing on means of subsistence; or, as Malthus himself somewhat unfortunately put it, while population increases in geometrical ratio, food supply can increase only arithmetically. The law had been stated previously by a number of writers, and it was only in his analysis of the mechanism of adjustment that Malthus claimed originality. In the first edition of his *Essay on the Principle of Population* (1798) he limited the possible checks on population to misery and vice. The strong tendency of his thought was to consider that at least the bottom of the social pyramid was always at the bare physical minimum of subsistence. In the second edition (1803), which was greatly amplified and modified in the light of his intervening travels and reflections, he introduced a third check, "moral restraint," which he thought had operated in civilized countries to maintain even the laboring classes at a level considerably above the physical minimum. Thus he introduced the doctrine of a "standard of living" determined by "habit" rather than by purely physiological causes as a regulator of population. But in either case his theory stressed the constancy of the standard, however fixed. The fact that a change in economic conditions brought no change of standard but only a decrease or increase of numbers at the same standard placed almost insuperable difficulties in the way of a permanent improvement in the condition of the working classes. In the later phases of his work he also developed greatly his ideas on the subsistence side of the problem, laying less emphasis on the empirical arithmetical ratio and more on the conditions underlying it. This led him to discover independently, although he was not the first to do so, the theory now called the Ricardian law of rent and its implication, the law of diminishing returns. The latter law, however, he never formulated explicitly.

Malthus' essay was in part an attack upon the indiscriminate policy of charity, particularly as exemplified by Pitt's poor law bill of 1796, which the conservative government was pursuing in its efforts to cope with the distress resulting from the breakdown of the feudal and mercantile society and the attendant emergence of modern industrialism. It was at the same time a devastating response to the utopian thinkers—represented chiefly by the rationalistic-anarchistic philosophy of Godwin—who under the impulse of the French Revolution had reexpressed in extreme form the optimistic version of English utilitarianism. To Godwin's thesis that a regime of ideal equality both in property and sexual relations could be brought into existence by the mere removal of institutional restraints and the release of the triumphant power of reason, Malthus replied that only the individual pursuit of self-interest working within the framework of the institutions of property, marriage and class division could save society from the unlimited increase of population and complete disintegration. Malthus' social philosophy represents a recrudescence of the Hobbesian current in utilitarianism, with important differences. He conceived of man as dominated not by a multiplicity of passions but by one, "the passion between the sexes." From this it followed that the Hobbesian conception of the basic disharmony between individuals was transformed by Malthus into the idea of a cleavage between the great classes—landlords, capitalists and laborers—into which society was divided by the conditions necessary to procure subsistence. Finally, Malthus like the other classical economists considers self-interest not as

wholly destructive but as the chief mitigating principle, the *vis mediatrix rei publicae*, enabling man to avert the worst of the evil consequences of the pressure of population. This is the last remnant in Malthus of any idea of a natural harmony of interests.

Some of the most prominent features of the classical system of economics resulted from the modification of the Smithian doctrines necessitated by Ricardo's acceptance of Malthus' ideas. The principle of population and the theory of diminishing returns and of rent were the principal elements which Ricardo worked into a theory of the distribution of wealth marked by the iron law of wages and the tendency of profits to decline. But while on the distribution side of the analysis Malthus and Ricardo were at one in substituting the assumption of class antagonism for the conception of the natural harmony of interests which, although modified by other elements, predominated in Adam Smith, they differed fundamentally with respect to the theory of value. The labor theory as foreshadowed by Locke and developed by Smith started from a "state of nature" characterized by a natural equality and harmony of interests. While Ricardo fully recognized the difficulties involved in its application to a capitalist society, on the whole he adhered to the same type of thought, although reluctantly. His followers, however, forgot his qualifications and hardened his theory into dogma. Malthus, on the other hand, emphatically denied the postulate of equality implied in the more orthodox form of the labor theory and based his theory of value as well as of distribution squarely on the principle of population. He was therefore more consistent than Ricardo, even though the general tendency of his work was more empirical; this fact and the implications of his basic principle led him at times in his discussion of value to emphasize demand rather than cost of production. It was also because of fidelity to the theory of population that Malthus favored moderate protection for agricultural products and became almost the sole exception among the economists of his time to the predominant free trade sentiment, as applied especially to the corn laws.

In addition to the great impetus he gave to demographic studies Malthus' ideas exerted an influence on social theory subsequent to the classical economics in at least two other important respects. First, the element of disharmony, which he introduced into the economy of competitive individualism, was one factor which paved the way for Marx' use of the Ricardian doctrines in his theory of the evolution of capitalist society. Secondly, Darwin drew from Malthus important elements of the theory of natural selection. The tendency for reproduction to outrun subsistence, generalized to include all organic life, gave the surplus of numbers on which selection could operate. In fact Malthus himself made use of the phrase "struggle for existence."

TALCOTT PARSONS

Works: *An Essay on the Principle of Population as It Affects the Future Improvement of Society* (London 1798; 2nd ed. enlarged as *An Essay on the Principle of Population, or a View of Its Past and Present Effects on Human Happiness with an Inquiry into Our Prospects respecting the Future Removal or Mitigation of the Evils Which It Occasions*, London 1803; 6th ed., 2 vols., London 1826); "Population" in *Encyclopaedia Britannica*, Supplement to 4th, 5th and 6th eds., vol. vi (Edinburgh 1824) p. 307–33, abridged as *A Summary View of the Principle of Population*, London 1830); *Principles of Political Economy* (London 1820; 2nd ed. 1836); *Definitions in Political Economy* (London 1827); *Observations on the Effects of the Corn Laws* (London 1814; 3rd ed. London 1815); *Inquiry into the Nature and Progress of Rent* (London 1815); *The Grounds of an Opinion on the Policy of Restricting the Importation of Foreign Corn* (London 1815); *The Measure of Value Stated and Illustrated* (London 1823).

Consult: Bonar, James, *Malthus and His Work* (2nd ed. London 1924); Halévy, Élie, *La formation du radicalisme philosophique*, 3 vols. (Paris 1901–04), tr. by Mary Morris (London 1928), especially pt. ii, ch. ii and pt. iii, ch. i; Stephen, Leslie, *The English Utilitarians*, 3 vols. (London 1900), especially vol. ii, chs. iv–vi; *Letters of David Ricardo to Thomas Robert Malthus*, ed. by James Bonar (Oxford 1887); Schumpeter, J., "Epochen der Dogmen- und Methodengeschichte" in *Grundriss der Sozialökonomik*, vol. I (2nd ed. Tübingen 1924) pt. i, ch. ii; Field, J. A., *Essays on Population and Other Papers* (Chicago 1931) ch. i; Mombert, P., *Bevölkerungslehre*, Grundrisse zum Studium der Nationalokonomie, vol. xv (Jena 1929), especially pt. i, ch. v; Griffith, G. T., *Population Problems of the Age of Malthus* (Cambridge, Eng. 1926).

MALTHUSIANISM. *See* POPULATION; BIRTH CONTROL.

MALYNES, GERARD DE (flourished 1586–1641), English writer on economic subjects. Malynes, a prominent although apparently not a very successful merchant, held the post of assay master at the mint and was frequently employed both by Elizabeth and James I as adviser on commercial questions. Despite his extensive commercial experience his economic ideas as expounded in a number of books and pamphlets

centered about a faith in traditional governmental restrictions, particularly the bullionist measures, which were fast losing significance in contemporary business practises, and stressed the evils resulting from the unsupervised activities of foreign exchange dealers. In one of his first works, *A Treatise of the Canker of England's Commonwealth* (London 1601), he lamented that exchange had become a "merchandise" rather than a "permutation" of coins according to bullion content. Arbitrage operations (*cambio sicco*) and finance bills (*cambio fictitio*) he branded as concealed usury and attributed the depreciation of sterling to the machinations of private exchangers. In 1622 he became embroiled in the first important economic controversy in England. While his antagonist, Edward Misselden, declared in opposition to the bullionist doctrine that specie outflow was the result of an unfavorable balance of trade, Malynes argued that "both commodities and money are passive, since the exchange was invented, which is only active," and that inflow of specie could be insured only by restoring the royal exchanger with a monopoly over exchange transactions. During the course of the controversy he published besides *Maintenance of Free Trade according to the Three Essentiall Parts of Traffique* (London 1622) and the *Center of the Circle of Commerce* (London 1623) *Consuetudo vel lex mercatoria* (London 1622, new ed. 1686), which contains his whole system of economic ideas and is the most accessible source for a study of them. It is important also as the first comprehensive treatment of the law merchant by an Englishman and for its part in acclimatizing the commercial law doctrine of the civilians in English common law. In his *England's View in the Unmasking of Two Paradoxes* (London 1603) while paraphrasing Bodin's refutation of Malestroit he accused Bodin of neglecting the real issue—the differential increase in prices between countries resulting from the activities of exchange dealers. His attack upon usury in *Saint George for England, Allegorically Described* (London 1601) was mediaeval in flavor, although he realized that interest could not be forbidden and refuted Culpepper's proposal for a legal limitation of interest rates.

Despite the vigor of his writings Malynes, one of the foremost English bullionists, failed to convince his contemporaries that the cambists were responsible for gold outflow or to elicit enthusiasm for a monopoly sale of exchange, *par pro pari*, by the royal exchanger. For a century of rising commerce his advocacy of a *mons pietatis*, a conception in harmony with his general sympathy for the poor, had little attraction. "In vain," wrote Thomas Mun, "hath Gerard Malynes labored so long and in so many printed books." But in a sense the very dogmatism with which Malynes espoused lost causes helped to crystallize the views of his opponents and so to develop the balance of trade doctrines.

E. A. J. JOHNSON

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MAMIANI DELLA ROVERE, CONTE TERENZIO (1799–1885), Italian writer, philosopher and statesman. Mamiani, who was born in Pesaro and educated in Rome, early became a liberal and patriot. Like so many of the leaders of the Italian Risorgimento he combined the vocation of an intellectual with the career of a man of action. In his early years he was professor of Italian literature at the Military Academy of Turin. In 1831 he took part in the revolutionary government at Bologna and after several months' imprisonment was exiled to Paris until 1846. During these years he was active as a philosopher, assuming a position of moderate empiricism and polemizing against the idealistic philosophy of Rosmini. After 1850, however, he made common cause with the Italian idealistic school, whose doctrines he sought to tie up with a modified form of Platonism. During the constitutional period of 1848 he was twice minister under Pope Pius IX. On the papal restoration and the occupation of Rome by the French in 1849 he retired to Genoa, where he established the Accademia di Filosofia Italica with the hope of founding a lasting school of Italian thought free from the fetters of theology. He was deputy in the Piedmontese parliament and minister of education under Cavour. He also taught the philosophy of history at the University of Turin from 1857 and after 1870 at Rome. Under the unified state he became a sort of high priest of the official philosophy, founding in this connection the important review *Filosofia delle scuole italiane*, which he edited from 1870 until the time of his death.

A large part of Mamiani's intellectual activity was devoted to the application of his philosophic ideas to questions of political and social theory.

In 1841 in a series of letters exchanged with Mancini he discussed the foundations of penology and held in opposition to the latter that the aims of law and morality were identical and that punishment was a matter of rewarding evil with evil. In a more important juristic work, *D'un nuovo diritto europeo* (1859), he sought to establish European public law on the foundations of liberalism and the self-determination of nationalities. Several of his works were devoted to the question of the church and religion. In his *Teoria della religione e dello stato*, which was placed on the Index, he assailed the privileges of all the churches, including the Roman Catholic, and maintained that they should be subject to the regime of public law as in the United States. He also outlined in his *La religione dell'avvenire* a positive and permanent religion for mankind on the basis of the everlasting revelation of God in the individual mind of man. In his last years Mamiani was preoccupied with social and economic questions and in a treatise entitled *Delle questioni sociali e particolarmente dei proletarj e del capitale* defended the institution of private property but pleaded for governmental measures to improve the economic condition of the proletariat. As always he maintained the primacy of the moral problem over economics and politics.

ALESSANDRO LEVI

Other important works: *Del rinnovamento della filosofia antica italiana* (Paris 1834); *Fondamenti della filosofia del diritto e singolarmente del diritto di punire* (Naples 1841, new ed. Livorno 1875), in collaboration with P. S. Mancini; *Poesie* (Paris 1843, new ed. Florence 1864); *Scritti politici* (Florence 1853); *D'un nuovo diritto europeo* (Turin 1859, 4th ed. 1861), tr. by Roger Acton as *Rights of Nations* (London 1860); *Confessioni di un metafisico*, 2 vols. (Florence 1865); *Teorica della religione e dello stato* (Florence 1868); *Le meditazioni cartesiane, rinnovate nel secolo XIX* (Florence 1869); *Compendio e sintesi della propria filosofia, ossia nuovi prolegomeni ad ogni presente e futura metafisica* (Turin 1876); *La religione dell'avvenire* (Milan 1880); *Delle questioni sociali e particolarmente dei proletarj e del capitale* (Rome 1882); *Del papato nei tre ultimi secoli* (Milan 1885).

Consult: Ferri, Luigi, "Commemorazione di Terenzio Mamiani" in R. Accademia dei Lincei, Rome, *Rendiconti*, 4th ser., vol. ii (1886) 29–52; Mestica, Giovanni, *Su la vita e le opere di Terenzio Mamiani* (Città di Castello 1885); Gaspari, D., *Vita di Terenzio Mamiani della Rovere* (Ancona 1888); Gentile, Giovanni, *Le origini della filosofia contemporanea in Italia*, 3 vols. (Messina 1917–23) vol. i, ch. i.

MAN. In bodily structure, in processes of growth, in long foetal development within the maternal uterus and subsequent suckling of the young at the maternal breast man conforms wholly to the pattern of placental mammals. The inclusion of man in the primate order rests upon his possession of five mobile digits on hands and feet, provided with flat nails instead of claws, the thumbs and great toes being more or less capable of opposition to the ends of the other digits for grasping. This classification of man is further supported by an overwhelming number of identities and similarities in anatomical and physiological details. With the New World monkeys, the Old World monkeys and the anthropoid apes man shares the possession of a large and highly convoluted forebrain which overhangs the hind brain, bony eye orbits with nearly complete back walls, frontally placed so as to permit stereoscopic vision, and other structural minutiae which define the Anthropoidea, the highest of the primate suborders.

Man resembles all of the anthropoid apes, especially in the lack of an external tail, in the intricacy and pattern of cerebral convolutions, in the suspension of the viscera within the body cavity so as to permit erect posture without prolapsus or sagging, in serological or blood reactions, in the prolonged period of embryonic development and postnatal growth, in the reproductive cycle. The human animal diverges from the gibbon and approximates the great anthropoids primarily in the vastly greater body bulk and size, in the specialization of the bony pelvis for support and transmission of the body weight to the lower limbs and in lesser elongation of the fore limbs, the hands and the feet.

Man differs physically from the anthropoid apes and the lower primates in the great absolute and relative size of his brain; his supporting, non-prehensile foot with its massive, non-opposable great toe; the reduced size and lessened protrusion of his jaws; the development of a positive chin eminence and the absence of projecting, interlocking canine teeth; the possession of a lumbar curve and a basin shaped, tilted pelvis modified for the functions of balancing and supporting the body in the erect posture; greatly hypertrophied and elongated lower limbs adapted for biped gait; shortened and refined upper limbs with broad hands provided with long and perfectly opposable thumbs and short fingers; a prominent nose with well developed tip and wings; complete absence of tactile hairs or feelers together with a marked sparsity of secondary body hair except on the head, in the pubic and axillary regions and on the face of adult males; and the presence of full, everted membranous lips.

Man as well as the monkeys and apes possesses a specially sensitive retinal area and stereoscopic vision not shared by the lower primates and other mammals; he is thus able to discriminate objects in relation to form, size and distance. It is doubtful whether these powers are employed by other primates to the same extent as by man. The sense of smell in the primates may be inferior to that of lower terrestrial animals, but little experimental evidence is available on this point. Hearing is probably as acute in primates as among the lower mammals. Especially developed is the sensitiveness of the hands in touch, in which respect man appears to outrank the apes and monkeys. The free employment of a superlative tactile and visual equipment is intimately related to the ability of "picturing movements," to the recollection of past events and to the anticipation of future actions. By the adoption of a terrestrial life and the assumption of an erect posture and biped gait protohuman primates emancipated their hands from locomotor functions and brought to full fruition the powers engendered by their bodily inheritance and fostered by the arboreal habitat of their ancestors.

Although apes and even monkeys have a limited ability to utilize and devise tools, man is the only animal who may be said to possess a material culture. He owes this acquisition to his superior intelligence and his greater ability to profit by experience rather than to any gift of manual dexterity or to any accident of environment. The development and transmission of culture are made possible by the power of articulate speech, the most effective means for the communicating of ideas and for the elaborating of mental processes. Man shares this power with no other animal. Physiologically it is related to the enormous size and complication of the human brain and of the entire nervous system. Yet no anatomist or physiologist can designate a single specific anatomical feature of man the absence of which determines the lack of language in the great apes. Even the so-called speech area, the third inferior frontal convolution of Broca, is distinguishable in the brains of chimpanzees and gorillas.

The complex and variable character of human social organization is also dependent upon cumulative transmission through the medium of language. The social groupings of man are culturally conditioned, whereas those of the subhuman animals seem to be principally instinctive. Zuckerman has demonstrated that the factors underlying the associations of apes and monkeys are characterized by their continuous sexual nature, as contrasted with the intermittent character of the sexual bond in lower mammals. This permanent sexual association is a common possession of all primates, but man differs fundamentally from other members of the order in his more clearly defined sexual responses and their greater dependence upon cultural factors and in his appreciation of their social significance. These differences are possibly quantitative rather than qualitative (*see* LANGUAGE; CULTURE).

Since the evidence of biological science indicates that man has evolved from a lower primate ancestor, it is possible to fix approximately the time of his achievement of a human status by considering the data of palaeontology and geology. The first remains of primates occur in the Palaeocene, or Lower Eocene, the first period of the Tertiary epoch. In the Oligocene period primitive types of Old World monkeys first appeared, as did *Propliopithecus*, a very small gibbonlike ape which probably stands at or very close to the point where the common ancestral stock of the anthropoid apes and man branches off from the primate trunk. In the Miocene deposits of the Old World full fledged types of gibbons are already represented together with Old World monkeys and generalized forms of the giant anthropoid apes—the *Dryopithecus-Sivapithecus* group, which is probably ancestral to the present chimpanzee and gorilla and perhaps also to man. It was during this period that the ancestors of man probably attained giant primate size and became erect terrestrial bipeds. A small minority of students of primate evolution contend that the human ancestral stock diverged from the primate trunk before the development of ancestral forms of the great apes, probably in the Oligocene period. Wood Jones postulates an independent development of the human line from the base of the tarsioid trunk, thus removing from human ancestry both Old World monkey and anthropoid ape stages of development. Osborn thinks that man's ancestors became small, ground dwelling, erect walking primates as early as the Oligocene period and would exclude the generalized great anthropoids from the human line of descent. The consensus of expert opinion, however, derives man from a giant, brachiating, anthropoid stock and places the separation of the human branch from the generalized great ape stem either in the late Oligocene or more probably in the Miocene

period. Some of the best authorities maintain the close collateral relationship of man, the gorilla and the chimpanzee. No competent student accepts the view that man has descended from any existing type of anthropoid ape.

No remains of man which can be attributed with certainty to the Pliocene period have yet been recovered, but the fact that primitive human types were already widespread in the Old World is indicated by archaeological data of the beginnings of a tool making culture. The stone implements of extinct types of man are naturally more numerous and less perishable than their skeletal remains. For many years archaeologists have argued concerning the possibility of recognizing humanly chipped and utilized stone implements before the latter have been fashioned into unmistakable artifact types by convention and through the increased skill of their makers. The existence of amorphous chipped stones called eoliths has been claimed in deposits of every geological period from the Eocene upward. A consideration of the palaeontological evidence as to the development of the primates and other mammals seems to indicate that no humanoid form was sufficiently highly evolved to reach a tool using stage before late Miocene or early Pliocene times. Ancestral forms of man, however, used and made tools before they had reached a degree of skill in their manufacture which would make such tools easily recognizable. While withholding decision on the difficult question of distinguishing between naturally chipped stones and those early and dubious eoliths, one may yet accept the judgment of Breuil and Sollas that the implements found in the Red Crag at Foxhall near Ipswich, Suffolk, are genuine human artifacts. Moir's discovery of a floor on which early man lived, used fire and chipped unmistakable implements during the Upper Pliocene period amply attests the presence in England in preglacial times of a being already possessed of more than the rudiments of a material culture and presumably equipped with all of the physical attributes which can be distinguished as human. From the beginning of the Pleistocene, or glacial, epoch down to recent times there has been recognized and described a sequence of stone implement cultures which become more diversified and better defined in succeeding archaeological strata. In many cases the skeletal remains of fossil men of the later periods are associated with these implements in undisturbed deposits.

It is not yet possible to assign definite and absolute chronological limits to the various stages of human development. Time scales have been developed by geologists to measure roughly the antiquity of different rocks and fossil beds. The estimates vary enormously according to the method used and the personal equation of the investigator. Probably the most precise method of determining geological age is by the study of the rate of disintegration of radioactive elements found in the igneous rocks of various periods. Such a radioactive time scale assigns roughly one million years to the Pleistocene period with its four glacial advances, perhaps six million to the Pliocene period and twelve million to the preceding Miocene. If such a time scale is tentatively accepted one must suppose that man's ancestors—giant terrestrial bipeds with emancipated hands and non-prehensile, supporting feet—appeared before the end of the Miocene period, or some seven millions of years ago. On the same basis the human utilization and fabrication of tools would begin at the latest in mid-Pliocene times and the beginning of culture would be dated approximately four million years ago. The regular and undisputed sequence of archaeological cultures of man, beginning with the Lower Pleistocene, stretches over more than one million years according to this calculation. Some geologists on the basis of sedimentation assign much shorter periods to the Pleistocene and preceding epochs, cutting down the estimates to one half or less of those yielded by the radioactive scale. The tendency of archaeologists working downward from the most superficial deposits to the oldest containing human artifacts is to be increasingly conservative in their estimates of the antiquity of human culture measured in lapse of years. Keith wishes to compress the Pleistocene and the Pliocene, within which are included the evolution of all known forms of fossil men from humanoid prototypes, into a total of 450,000 years. Ultimately, however, the student of man must depend upon the more exact measures of time developed by geologists and physical chemists rather than upon any archaeological estimate of the rate of culture change or upon any biological prejudice as to the period required for evolutionary modification.

Palaeontological evidence concerning the distribution of fossil primates sets up boundaries which delimit the probable areas of man's differentiation from an apelike ancestry. In the New World there are no fossil anthropoid apes, nor have archaeological finds thus far produced

any convincing evidence of a high geological antiquity of human occupation. While it is still possible that further investigations may reveal the presence of man in North or South America during late glacial times, he could have reached the New World only as a comparatively late migrant physically evolved to approximately his modern status and having already acquired more than the rudiments of a culture, including some knowledge of navigation. The low zoological rank of the fauna indigenous to Australia precludes the possibility of higher primate evolution in this continent, although it was probably peopled in late Pleistocene times. In spite of the indubitably great antiquity of man in Europe and the discovery there of a number of the most ancient human types that continent must be considered primarily as a western extension of the great Asiatic land mass and seems to have derived its ancient fauna and early human inhabitants by migrations from Asia and from Africa.

During Miocene times giant generalized anthropoids of the *Dryopithecus* and allied families inhabited a forest zone extending on both sides of the Mediterranean from the Atlantic seaboard eastward and across the southern portion of Asia to its southeast extremity, including the Indian peninsula and presumably Indo-China and the adjacent great islands of Java, Borneo and Sumatra. Somewhere within this zone or at its margin the human stock probably differentiated from its anthropoid forbears. There are no convincing evidences favoring the claim of the African region of this anthropoid zone as the birthplace of man over that of Asia or vice versa, in spite of the predilections of many palaeontologists in favor of one or the other continent either on account of its size, its yields of ancient human or anthropoid types or the antiquity of its cultural deposits. It should be noted, however, that most students assume an Asiatic origin of the human family. Granting that man's humanoid precursor was a progressive anthropoid already adapted for life on the ground and virtually of present human size, it seems probable that such a terrestrial and migratory prehuman stock would disperse throughout the entire anthropoid zone and would at several places continue to evolve toward a human status, differentiating into a number of distinct genera and species. Such a view is polygenetic only so far as it postulates the diversification of several ancient species of man, of varying degrees of evolutionary development, from a common humanoid stock. The only scientific alternatives to this opinion involve either the presumption that the common prehuman stock remained stationary in some unspecified geographical area and thence sent out successive human mutations of progressively higher evolutionary status, or that all of the morphologically heterogeneous and geographically dispersed types of fossil man can be arranged in some sort of unilinear genetic series, each directly descended from one of the others. The former view is favored by some students of human origins; the latter has few if any adherents. Neither is acceptable, for evolution is a continuous process operating upon all animal species in all places according to the requirements of natural selection and the possibilities inherent in their organisms.

Almost every year adds some new find to the considerable assemblage of skeletal remains of geologically ancient man. The most important of these are the *Pithecanthropus erectus* of Java, a being hardly human with a very small apelike skullcap and a quite modern femur indicating an erect biped gait; the *Sinanthropus* crania of Peiping, China, representing an advance over the Javan specimen in frontal and parietal brain development, with teeth showing enlarged pulp cavities; the enigmatic *Eoanthropus* of Sussex, England, with essentially modern brain case and chimpanzeelike mandible having projecting canine teeth; the Heidelberg lower jaw—massive, chinless but splayed out posteriorly in modern fashion and provided with teeth of moderate size again showing enlarged pulp cavities; the Rhodesian man with gorillalike brow ridges, huge jaws in which are implanted badly decayed teeth of modern form and with features of the skull base and limb bones indicative of a completely erect posture; the rapidly increasing array of Neandertal skeletons, all with great brow ridges, low cranial vaults, projecting jaws, chins rudimentary or absent and "taurodont" teeth showing the enlarged pulp cavities. Difficulties constantly recurring in the interpretation of these fossil skeletons are: doubt as to their exact geological provenience; the possibility that a mixture of bones of different individuals and distinct species in the same deposit may result in reconstructions of fictitious types; ignorance of the range of individual, sexual and specific variation in fragmentary fossil forms, which causes anatomists to recognize new genera or species that may never have existed. There is no general agreement upon the genetic relationship of these various forms of ancient man, nor do geological facts afford a sufficiently precise dating of most

finds to enable them to be placed in a chronological sequence. The occurrence of a type in a given geological horizon does not necessarily imply that the form of man in question first evolved or finally became extinct in that period. Pliocene forms may persist into Pleistocene times and exist contemporaneously with newer and more progressive types.

Pithecanthropus erectus undoubtedly represents an intermediate form between man and his anthropoid ape ancestors. The *Sinanthropus* type of China seems to bridge the gap between *Pithecanthropus* and the more highly evolved Heidelberg-Neandertal line of fossil men with taurodont specialization and many generalized anthropoidal features. Rhodesian man may be an early offshoot of this same stock. The recent discovery of a series of skeletons in a cave at Athlit, Palestine, associated with a Mousterian stone chipping industry, possibly indicates a differentiation of a Neandertaloid group in the direction of a more modern and perhaps Australoid type. The Piltdown skull, *Eoanthropus Dawsoni*, if the association of mandible and brain case is valid, stands completely apart from the *Sinanthropus*-Heidelberg-Neandertal line and may be derived from the stock which ultimately produced all or nearly all the existing human varieties. Conservative students hesitate to place any of the ancient fossil types mentioned in the direct ancestral line of modern man, preferring to regard them as abortive offshoots. It is wholly possible, however, that future discoveries will disclose intermediate forms which will permit the assignment of one or more of these fossils to the stem which leads to *Homo sapiens*—to which, it is commonly held, existing types of man belong. This species has differentiated into three principal varieties, Negroid, Mongoloid and white, in comparatively recent times—perhaps not before the latter part of the Pleistocene period. The conception of the specific unity of modern man is based upon the physiological criterion of fertility in crossing; upon the common possession of many morphological features; upon the belief that existing differences between the principal human groups arise from conditions of domestication and from selectional or adaptive modifications. Such modifications are attributed to climatic and other environmental factors which have operated upon geographically isolated human groups over long intervals of time. The morphological, physiological and psychological resemblances which unite all races of modern man are considered too numerous and too close to be explained by the hypothesis of convergent evolution of separate stocks. While this argument has a certain measure of scientific validity it is not altogether compatible with the demonstrated multiplicity of species and possibly even genera of fossil human types. Several anatomically modern forms of fossil man have been found in Upper Pleistocene deposits. These display in certain cases combinations of features generally considered distinctive of the Negroid, Mongoloid and white groups. Some students regard these late fossil forms as undifferentiated prototypes of modern man antedating the segregation and intensification of Negroid and other group characters. It is equally possible to consider them early examples of hybridization, since similar combinations are found in recent offspring arising from known crossings of physically divergent races. The view here favored is that the principal varieties of modern man had already differentiated from a common stock before the end of Pleistocene times and that the prototype of *Homo sapiens* is still to be discovered. It must be recognized, however, that Negroids, Mongoloids and whites resemble each other in skeletal features more closely than any of them resemble the older fossil human types, to which, admittedly, separate specific classification must be assigned. This fact militates in favor of the opinion that all present human groups have sprung from some common ancestral stock rather than from diverse species of fossil man either known or as yet undiscovered.

The formation of races among the principal varieties of *Homo sapiens* is attributable to one or more of the following causes: inbreeding and selection of the favorable variations of groups isolated in specific physical environments; mutations; hybridization of physically diverse stocks and inbreeding and selection of the mixed offspring of such crossings; adaptive modifications of isolated groups to such environmental factors as diet, amount of moisture, intensity of sunlight and geographical elevation. Most anthropologists proceed upon the facile and probably erroneous assumption that different degrees of human pigmentation are directly attributable to amount and intensity of sunlight to which numerous ancestral generations have been exposed in some region of isolation, and that other racial characters are similarly environmentally actuated and in some inexplicable method transferred to and fixed in the germ plasm. There is, however, an almost complete lack of evidence

which would establish a direct causal relationship between any heritable racial anatomical feature in man and specific environmental factors. Race is a matter of a common physical inheritance from the same group of ancestors, and racial characters are inherited not acquired. The only dependable criteria of race are found in non-adaptive, heritable, physical features. These are due to inherent tendencies in diverse stocks toward variation along specified lines in different parts of the organisms, selected doubtless to some extent by their favorable or harmful character but largely of an indifferent nature and hence limited only by the variational capacity in the original strains. The mechanism of such racial differentiation is probably the secretions of the ductless glands, or endocrines, but the endocrine balance is also largely an inherited feature, not simply an effect of diet or other extrinsic factors.

The geographical distribution of finds of archaic types of fossil man may be roughly delimited by a quadrilateral, of which the northwest corner is at Piltdown Common, Sussex, England, the southwest corner at Broken Hill, Northern Rhodesia, the southeast angle at Trinil, Java, and the northeast at Peiping, China. Only the Spanish peninsula with its finds of Neandertal man forms a westward salient of this quadrilateral. Within this area are included also all geologically ancient types of *Homo sapiens* heretofore discovered with the exception of those disinterred in a South African extension. Knowledge is at present insufficiently complete to allow more than a tentative or even speculative sketch of the original differentiation and dispersion of the human races from within this quadrilateral. The southwestern angle of the quadrilateral is not far from the probable center of diffusion of the African Negro stock, which seems to have dispersed from the lake region southward and westward. The southeastern corner was formerly the seat of an archaic, eastern branch of the Negroid group, which has now been pushed out for the most part to Melanesia by the southward thrust of mixed Mongoloid Malays. An ancient Negroid stratum has survived in the Indian peninsula, overrun and submerged by invasions of brunet whites. From the southeastern Asiatic angle there also migrated to Melanesia and Australia at some prehistoric period the archaic and problematic Australoids. The northeastern angle of the quadrilateral is probably somewhat east of the center of diffusion of the great Mongoloid stock, concerning whose origin and affinities very little is known but who migrated in all directions from the central Asiatic plateau and peopled the New World. On the basis of present evidence the dispersal of the Mongoloids seems to have been subsequent to the occupation of the southeastern, eastern and northern Asiatic areas by ancient white and Negroid stocks which they displaced and with which they mixed. The central belt of the quadrilateral, extending on both sides of the Mediterranean Sea eastward through Mesopotamia and as far as India, seems to have been the ancient seat of long headed whites, who pushed out to the northwest in late Pleistocene times or possibly earlier and eventually extended their domain to Scandinavia and the northern Asiatic steppes and even as far eastward as China. The western half of the northern marginal band was probably the center of differentiation and diffusion of two brachycephalic white races—the Armenoids and the Alpines—and the eastern half the original home of the Mongoloids.

EARNEST A. HOOTON

See: ANTHROPOLOGY; ANTHROPOMETRY; BIOLOGY; COMPARATIVE PSYCHOLOGY; EVOLUTION; EVOLUTION, SOCIAL; CULTURE; SOCIETY; LANGUAGE; WRITING; DIFFUSIONISM; RACE; MIGRATIONS; ARCHAEOLOGY; PREHISTORY.

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MANAGED CURRENCY. *See* MONEY.

MANAGEMENT may be defined as the process by which the execution of a given purpose is put into operation and supervised. The combined

output of various types and grades of human effort by which the process is effected is again known as management, in the human sense. Again, the combination of those persons who together put forth this effort in any given enterprise is known as "the management" of the enterprise. The term therefore covers the process of managing, the combined human ability involved in managing and the personnel required to manage.

The word is also generally used somewhat loosely to describe the general conduct and control of an enterprise, irrespective of the different functions involved. A more precise significance is, however, coming to be accepted, particularly among those whose studies require something approaching a technical meaning. In this more precise sense management is coming to mean the control of the process of executing a given policy and is to be clearly distinguished, as regards both the activities involved and the abilities required, from the formulation and determination of that policy, which is the task of the process known as administration. The two together constitute the control of the enterprise. In order that they may function a living structure is built by the process of organization, so that what is to be done and the persons to do it are grouped for the most efficient working. These three processes—administration, management and organization—are common to all corporate undertakings. They may assume different forms in different enterprises; they may be carried out indifferently or ably; each of those who perform them may participate in all three or concentrate on one alone.

The determination of this fundamental conception is slowly bringing about an understanding of the fact that although the enterprise of a church or school or hospital may be far removed in character from that of steel manufacturing and although both may be far removed from that of an army, all have similar basic principles of technique in their administration, organization and management. The study of these principles is perhaps one of the most modern phases of social scientific research; it cannot fail to bring the ideas of modern business management more into line with the principles which centuries of experience and study have proved valid for those far older forms of human association.

In every form of corporate human endeavor the infinitely developing complexity of modern civilization demands a higher ability in those who control. As industry grew out of its earlier factory stages and the modern joint stock system of ownership matured, the owners of capital inevitably became more and more remote from the businesses they owned. The original proprietor-manager was replaced by hundreds, perhaps thousands, of shareholders drawn from all classes and often completely unacquainted with the concerns in which they were financially interested. This new system of ownership not only made industrial growth more rapid and extensive but also called into being as separate and distinct entities in the industrial structure the two newly recognizable activities of administration and management. Democratization of ownership led to specialization in control. The representation of capital in industry has therefore tended increasingly to be assumed by administration and management.

The sphere of management has become further enlarged as industrial operations have extended. Its practise is no longer merely a question of applying native intelligence and common sense; it demands in addition specialized knowledge and expert ability in many fields. Management has developed into a combination of techniques, which must be learned; and it is coming to be practised, like the older professions, on a basis of ascertained knowledge and established scientific practises. The developments which follow upon the growth of large businesses, the persistent stress of competition, the constant flow of inventions and improvements, the wide results of scientific research in many directions, the insistent necessity for better quality and lower costs and the urgent demand of the workers in industry for a higher standard of living and a more real share in industrial rewards have all contributed to render the task of management increasingly complex and responsible.

This enlargement of the sphere of management has come about partly through the growth in the size of industrial units and partly through the specialization made necessary by increased technicality. Whereas in the early stages of factory development the work of management was primarily concerned with the processes of production and even in that sphere was far from scientific, later growth has involved an ever widening field of management activity—the opening up of the new functions of research and planning in production, distribution and office routine and, equally, the development of the new industrial functions of comparison (involving

the close study and control of statistics in every branch of an enterprise) and advertising. Accounting has advanced from the quill pen stage to the highly complex machine system. Calculation by guesswork has developed into the modern system of budgeting. Transport has become a highly specialized service. The supervision and guidance of labor and of working conditions have passed from the elementary stage to the technical in half a century. The study of machine and hand processes has been divided and subdivided, so that engineers, chemists, psychologists and research experts now find valuable occupation in work which an earlier age relegated to foremen and workers themselves.

In consequence of the specialization of management its organization, especially in larger enterprises, has become a major problem of administration. It is primarily a problem of coordination—of welding the many parts, each contributing to the execution of the governing policy, into one smoothly operating and effectively coordinated body. To this end administration is gradually perfecting its own technique, which involves a clear scheme for the determination and interpretation of policy and the checking of results, an orderly scheme for the budgetary control of all managerial activities, a well matured plan of corporate organization to insure the interlocking of every useful activity and, probably most important of all, a strong and ceaseless check upon the efficiency of the management personnel and the closest attention to its recruiting and conditions of work.

This essential specialization of management has in large measure determined the basic principle underlying the form of its organization, which must recognize the existence of these different techniques and permit each a full field for development. This principle of organization on the basis of functions—a grouping of activities, like with like—although sound as a single principle cannot in practise be taken as the sole principle. Experience has revealed what would equally have been revealed by wider study of organization through the ages and in other spheres: that the functional principle of organization needs tempering by other equally basic principles. It must be made to harmonize with the vital need for coordination in any enterprise; it must be regulated by the necessity of the centralization at various points in an organization of responsibility for results; it must be modified to insure the fullest possible contribution from all who constitute an organization. Yet it is true that the basis of the form of modern organization most calculated to yield results is a functional basis, adapted to the needs of the particular enterprise and translated into practical shape in the light of other organizational principles.

One of the major germinating influences in the development of management has been the steady growth over the last half century of the use of scientific methods and the pressure from within and without to render the technique of management scientific in the same sense as other techniques. This objective became crystallized in the movement, generally known as scientific management (*q.v.*), which sprang from the original work of F. W. Taylor. This movement has emphasized the necessity for continuous research and experiment in every branch of management; it has promoted the establishment of standards of procedure, of methods and of results, based on the knowledge gained by research, and has built up a scheme of control based on these standards. These developments necessitated in those who perform the tasks of management a fundamental change in their approach to their work: guesswork must be replaced by systematized knowledge, a trust in fortune by a careful analysis of the problem in hand and a ready acceptance of tradition by unprejudiced research relentlessly pursued. In the work of management this movement has led to the rapid development of such activities as costing, time study, motion study, market research, production planning and budgetary control. It has interpreted into a philosophy the manifold changes inevitably and variously brought about in management and has given them character, form and purpose.

Despite the immense growth in the responsibility of management, the amazing extension of its activities and the ever deepening intensity and complexity of its work the preeminent factor in management remains the managerial personnel. The science of management, necessary as it is for the furtherance of managerial efficiency, remains ineffective except in so far as by the human art of managing it is fruitfully utilized. Scientific knowledge is an essential preliminary to the practise of an art, but the art itself calls for human skill, the human faculties whereby the science is effectively applied to particular circumstances. It is highly questionable whether enough thought and effort have yet been directed to providing all corporate enterprise with the highest possible caliber of managerial man power. In large measure the stand-

ard of manpower can be raised by training, but it is only recently that organized educational work has been attempted on anything approaching an adequate scale. Equally, little has been done to lift out of the rut of the old empirical methods the immensely important task of selecting the managerial staff; and much yet remains to be done in the study of its working conditions, remuneration, status, system of promotion and direction. If there were devoted to these ends the same amount of thought and time that is devoted in most progressive concerns to the planning of new machinery or the lifting of an already high output, industrial efficiency and stability would be vastly increased. A committee set up by the Federated American Engineering Societies to study waste in industry estimated in 1921 that from 50 to 75 percent of the waste in certain lines of industry (boots and shoes, clothing, textiles, building trades, printing trades and metal trades) was attributable to shortcomings on the side of management and less than 25 percent to labor. It is in the direction of improving the man power of management that the greatest progress remains to be effected.

This is the case to an even greater extent in public institutions, national and civic government, educational organizations and the whole field of corporate activity. Society suffers setbacks and wastes as a result of this disproportion between the knowledge it possesses and the ability wisely and scientifically to apply that knowledge for the common weal. This disproportion is exemplified perhaps most clearly in the experience of Soviet Russia, which has abandoned private enterprise in economic life and has turned the state into a vast economic machine to function for the benefit of the masses but still finds itself dependent upon yet hindered by the state of efficiency of its managerial personnel. Within the broad lines of policy set by the leaders of the Communist party economic tasks and resources are allocated among the various individual trusts and plants. But the problem of execution rests with the managerial personnel within these, and it is their inability to perform their tasks which has to a considerable extent limited the progress of Soviet industry. It is to remedy this limitation that such liberal use has been made of foreign experts, who at once manage current production and train their successors from among the ranks of the Russian people.

In capitalist industry the scope of managerial discretion is limited by the requirement that whatever is done must be profitable, in either the immediate or some more or less reasonable future. The touchstone of any managerial proposal must inevitably be its profitableness. Since, as Veblen has so clearly indicated, business profits in modern industry may sometimes be obtained at the expense of industrial efficiency, it is not necessarily true that the most profitable managerial policies from the standpoint of the individual firm are the most desirable from the standpoint of social interest. In the increasing specialization of management, however, and in the consequent increasing infiltration into managerial personnel of technically trained persons whose prime interest and desire are production rather than profits, one may perhaps see a possible agency for a new industrial revolution and for a conversion of industry into an agency for social welfare rather than for individual profit. Other writers, such as Brookings and Means, viewing the function of management particularly from the standpoint of the separation of ownership from control, have emphasized the diffusion of ownership and the concentration of corporate control in the hands of the managerial personnel; they have discerned therein the transformation of management from a representative solely of capital, interested only in obtaining the largest possible profit for the shareholders, into guardians of the social welfare, managing industry so as to assure to the shareholders a fair return, to the laborers a just wage and to the consuming public reasonable value. As those who practise the profession of management in all its branches come to appreciate this social purpose in their work—the vital service to the community which both the exalted and the humble in their ranks are rendering; as this conception of their work as a social service comes to be accepted as a professional objective; and as one and all come to feel their common unity in that service and a common pride in the good exercise of their profession, so will the standard of that service be raised to the level which its vast responsibilities demand.

OLIVER SHELDON

See: BUSINESS ADMINISTRATION; ADMINISTRATION, PUBLIC; SCIENTIFIC MANAGEMENT; PERSONNEL ADMINISTRATION; ENTREPRENEUR; EXECUTIVE; CORPORATION; LARGE SCALE PRODUCTION; EFFICIENCY; BUSINESS EDUCATION; LABOR-CAPITAL COOPERATION.

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MANCHURIAN PROBLEM. The problem of Manchuria centers around the conflict between the expansive West on the one side and the newly self-assertive East on the other. In so far as it involves China, Japan and Russia, the three states bordering on Manchuria, it is only a regional problem; but by reason of its implications, though less direct, for the United States and in a different sense for the major European powers it becomes a world wide problem of war and peace. The stake for which rival powers contend is the profit of Manchuria's economic exploitation.

Until the closing years of the nineteenth century Manchuria was virtually unknown and unpopulated and wholly undeveloped. Juridically it was part of China, as the Manchu dynasty which had ruled China since the seventeenth century emanated from Manchuria. After the overthrow of the Manchu dynasty in 1912 the Three Eastern Provinces, as the Chinese called Manchuria—Fengtien, Kirin and Heilungkiang—occupied a status between full incorporation into China and dependency. In actuality, however, Manchuria had already become a pawn in world politics. Russia had long before started its glacial movement eastward and had advanced so far into Asia as to necessitate a delimitation of frontiers. The Treaty of Nerchinsk in 1689 had fixed the Amur River watershed as the line; and by negotiations in 1858 and 1860 Russia obtained from China, which had already been humbled in two wars with western powers, the rest of what is now Siberia.

In 1894 the Sino-Japanese War broke out, signalizing Japan's advent into world affairs. Japan won and in the Treaty of Shimonoseki in 1895 forced China to cede the Liaotung Peninsula, the southeastern tip of Manchuria. Russia, supported by Germany and France, then intervened and compelled Japan to relinquish the peninsula. As reward for this assistance Russia in the following year exacted from China the right to build a railway from Chita across Manchuria to Vladivostok with a view to shortening the trans-Siberian route. The agreement also gave Russia the right to acquire lands on both sides of the line for access to necessary construction materials as well as the right to administer these lands, which was subsequently unilaterally construed by Russia as the right to station military police. China was empowered by the agreement to own shares in the railroad company and to participate in its management, but this power became nominal only. In 1898 the battle of the concessions began, with each great state pressing for its share of China. To Russia fell a leasehold on the Liaotung Peninsula and the right to construct a branch of the Chinese Eastern Railway—as the line built in pursuance of the 1896 agreement is known—from Harbin south to Dairen on the Liaotung coast. Russia had succeeded in closing a grip around Manchuria, but the Russo-Japanese War was foredoomed.

The war came in 1904 and was closed in 1905 by the Treaty of Portsmouth, whereby the Russian leasehold on the Liaotung Peninsula was ceded to Japan together with the part of the Chinese Eastern Railway running between Changchun and Dairen, now known as the South Manchuria Railway, and all Russian rights connected therewith. It was further provided that both countries were to maintain a limited railway guard along their respective portions of the line. In December, 1905, China and Japan signed an agreement confirming the transfer and in a supplementary agreement Japan bound itself to withdraw its railway guard if and when

Russia did so. Russia did withdraw its troops on China's demand after the Bolshevik revolution but Japan has not done so to date. It is contended by Japan that China in a secret agreement concluded at the same time engaged not to construct any railways parallel to the South Manchuria Railway, but China denies the existence of such an agreement. China has subsequently constructed such lines, while Japan has protested against them; and this is the basis for some of the sharpest controversies between the two countries.

The original concession of the Liaotung Peninsula leasehold was for twenty-five years, expiring in 1923; the Chinese Eastern Railway was ceded for eighty years from date of completion, or until 1983, with a provision that China might recover the road by purchase in 1939. In 1915, however, Japan presented an ultimatum to China, forcing the latter to sign a treaty based on the so-called Twenty-one Demands, whereby the leasehold on the Liaotung Peninsula was extended to 1997 and the concession for the South Manchuria Railway to 2002. The right of repurchase in 1939 was revoked. China has since contended that this treaty, being extorted by *force majeure* and without quid pro quo, is invalid and that Japan's continued presence in Dairen, Port Arthur and environs is an act of trespass. It is a contention that Japan of course has not even recognized. This is the fundamental issue between the two countries and it is an irreconcilable difference. All other disputes in Manchuria as to the status of Japanese citizens, the right to purchase land and similar questions are corollary thereto.

Manchuria might have remained deadlocked by conflicting juridical claims had there not supervened the force which has changed all far eastern relations. This was Chinese nationalism. China set out to recover its alienated territory and sovereign rights. In south Manchuria it entered upon a railway building program with the object of laying down a system which would drain off Manchurian products via Chinese railways to Chinese ports instead of via the South Manchurian system to Dairen, the Japanese port. Simultaneously it sought by establishing banks, factories, mills and trading concerns to break Japan's economic monopoly. In north Manchuria it encroached steadily if indirectly on Russia's position. China had been on bad terms with Soviet Russia since the repudiation of the informal alliance in 1927 and the severance of diplomatic relations between the two countries. There were numerous incidents and in 1929 China resorted to direct action. It seized the Chinese Eastern Railway, arrested a number of Russian employees of the line and deported several higher officials, including the general manager. Russia dispatched a military expedition into Manchuria and after inflicting a sharp defeat on Chinese troops compelled China to restore the status quo ante.

Between China and Japan ill feeling is of longer standing and incidents have been even more numerous. China steadily became more exigent and the military party in Japan more outspoken in demanding a "strong policy," by which it meant military punitive measures. A succession of minor clashes in 1931 precipitated the crisis. On September 18 the Japanese occupied Mukden, disarmed the Chinese police and took over the civil administrative machinery. One center after another was similarly occupied and before the end of the year practically all of Manchuria was under Japanese domination, including parts of what had been the Russian sphere. After an interval in which local governments were set up under the aegis of Japan, on February 18, 1932, the independence of Manchuria and Inner Mongolia was proclaimed and a new state set up under the name of, at first, Ankuo, later, Manchukuo, with subsequent de jure recognition by Japan. On March 9 Pu Yi, who had been deposed as emperor of China in infancy, was brought by the Japanese to Changchun and installed as dictator. At the same time all important branches of the new government were put under the supervision of Japanese officials. In short, Manchuria had become a Japanese possession but not without challenge. First, Chinese military units have continued a guerrilla campaign. Second, Soviet Russia frightened by Japanese encroachments brought up reenforcements and strongly fortified its borders. Third, the Occident intervened through the League of Nations and the United States.

Fundamentally there are two conflicts in Manchuria. One is between China and all other powers. China holds Manchuria to be its territory in law and wishes to make it so in fact. The issue then is between Chinese nationalism and the expansionist ambitions of other powers. The other conflict is among the great powers for the right to exclusive domination over Manchuria. By reason of propinquity, momentum and the urgency of necessity Japan is the most vigorous claimant. The necessity is, first, that of self-defense. Manchuria in the hands of some other

great power, as was threatened in the time of the imperialistic raids on China, would constitute a menace to Japan's continued existence as an independent nation. Early in the twentieth century the aggressive ambition of czarist Russia was the source of fear. Now Soviet Russia with the propulsive force of a revolutionary mission is again the source. Second, there is economic need. Japan is notoriously wanting in raw materials, especially those necessary to rapid industrialization. Manchuria is rich in raw materials, especially coal, and has considerable deposits of iron and minerals. It has vast uncut timberlands and in potentiality of agricultural development is comparable with the American northwest. Furthermore it is the world's principal source of the soya bean, of which over 200,000,000 bushels are now produced annually. Japan, being overpopulated, deficient in raw materials and food supply and committed to industrialism, must have access to raw materials, a market for its finished products and an outlet for the investment of surplus capital. All of these Manchuria offers. Its foreign trade in 1929 amounted to more than $500,000,000, of which Japan had more than two fifths. Japan's investments there are estimated at more than $1,000,000,000. The country is still sparsely populated, with some 30,000,000 inhabiting an estimated area of 450,000 square miles, including Jehol. But the pressure of population in China has been pushing between half a million and a million emigrants over the northern borders into Manchuria every year, and with peace in Manchuria this movement would advance rather than recede. The prospect is that in a measurable period Manchuria will be more heavily populated.

To Japan then Manchuria represents a huge vested interest and an economic outlet. Abstractly there is no reason why all Japan's needs from Manchuria could not be fulfilled without actual control. It could buy raw materials from Manchuria and sell its finished products there in the open market, having the advantage of propinquity over other foreign competitors. In actuality there are two reasons why Japan will not rely on the working of natural law. The first is precedent. Since Japan emerged into the modern world it has been the law of power politics that strong nations desiring access to the advantages of a rich, weak and undeveloped land will seize it if they can in order to enjoy a monopoly; therefore access to the benefits of such a land can be assured only by exclusive possession. This law has been in full operation in the Far East and Japan refuses to believe that it has been abrogated; the evidence of a new spirit in international relations since the World War is not conclusive. Japan assumes instead that since China is not strong enough to hold Manchuria, some other power will take it unless Japan does.

The second reason rests on conditions in China. The first of these conditions is Chinese nationalism, which is economic no less than political. China aspires to the profits from Manchurian development for itself. China's railway program in Manchuria is evidence; even before hostilities broke out in Mukden in 1931 there had been a sharp diplomatic struggle over railways, and in large part the hostilities were precipitated by this struggle. While the rush of Chinese immigration into Manchuria offers promise as a market it tends also to fix a new economic polarization and to draw Manchuria into China's economic orbit. The population of Manchuria by Chinese would work to Japan's advantage if the Chinese remained passive and in a state of willing tutelage. But they will not so remain in either China proper or Manchuria; they are competing similarly in the foreign trading centers on the Chinese coast, in Shanghai, Hankow and Tientsin, and there too to the foreigner's disadvantage. The second Chinese condition affecting Japan's attitude is the breakdown of the traditional processes of government in China, as reflected in civil wars, banditry, maladministration and corruption, which although they may be inescapable in a period of societal transformation obstruct the channels of trade. To permit Manchuria to become an integral part of China would subject it to the same condition, whereas even under indirect Japanese hegemony it has been exempt.

The Manchurian problem is not only regional in scope. Soviet Russia is involved because it abuts on Manchuria and because of its interest in the Chinese Eastern Railway and the north Manchurian cities which the railway serves economically. After the Russo-Japanese War the two countries came to an understanding based on non-interference in each other's spheres. Until 1931 this was adhered to except in the abnormal years of the World War, and relations between them were undisturbed. Russia's mobilization on the Siberian border in 1932 was notification that non-interference remains a condition of peaceful relations. The interest of the western powers, notably the United States, has been to keep Manchuria a free field for economic

competition. To this end the United States has actively opposed every effort to detach Manchuria from China and has never conceded that Manchuria was exempted from the open door doctrine, the principle of equality of opportunity for all trading nations, laid down for China by John Hay. In 1915 after the Twenty-one Demands the United States sent identical notes to China and Japan asserting that it would recognize no treaty impairing the rights of the United States in China, the political or territorial integrity of China or the open door policy. The Nine-Power Treaty concluded in Washington in 1922 again bound the signatories, the nations having interests in the Far East, to respect the sovereignty and integrity of China and to confer "whenever a situation arises which in the opinion of any one of them involves the application of the stipulations of the present treaty." The issue could be evaded until 1932, because no occasion arose to test the question whether Manchuria was a part of China. In 1932 the issue could no longer be evaded. Intervention by the League of Nations and protest by the United States having proved unavailing to arrest Japan's advance throughout Manchuria, the United States on January 7, 1932, sent a note to China and Japan to the same effect as the one of 1915 but adding "that it does not intend to recognize any situation, treaty or agreement which may be brought about by means contrary to the covenants or obligations of the Pact of Paris of August 27, 1928." The Assembly of the League of Nations in resolutions passed March 11, 1932, took a similar stand, although less unequivocally. On this issue there can be no technical evasions. The western powers refuse to recognize the legality of Japan's authority outside the Liaotung Peninsula and the South Manchuria Railway zone or the existence of the so-called Manchukuo. Japan steadfastly refuses, as it always has refused since 1905, to recognize the right of any third power to interfere on the question of Manchuria. While conceding Chinese sovereignty, at least until the setting up of Manchukuo, it holds Manchuria to occupy a separate status by virtue of the treaties of 1905 and 1915.

In December, 1931, the League of Nations decided to appoint an international commission to conduct a first hand investigation in Manchuria. The commission, headed by Lord Lytton, published its findings in October, 1932. It decided against restoration of the status quo ante September, 1931, and against the maintenance and recognition of Manchukuo; it recommended the autonomy of the Manchurian provinces under Chinese sovereignty, but with regard to Japan's peculiar interests, and the institution for this purpose of a special administrative regime for the provinces. It therefore advised the Council of the League to invite the Chinese and Japanese governments to convoke a joint advisory conference to draft treaties embodying the principles and methods of operation of the new regime.

Certain terms of reference were laid down for the guidance of this conference: internal order was to be maintained by a special gendarmery organized and maintained with the aid of foreign advisers; all other troops were to be withdrawn; Japan was to be given the right of free participation in but not control of the economic development of Manchuria; the right of foreigners to settle and lease land was to be extended throughout Manchuria but with modifications of the right of exterritoriality; a new agreement was to be drawn up for the operation of the railways in Manchuria, preferably on a basis of amalgamation of Chinese and Japanese lines, otherwise on a basis of joint operation under a Sino-Japanese commission with the assistance of a foreign adviser. To these proposals, however, Japan refused to give consideration and reiterated its determination to stand by its recognition of Manchukuo as an independent state.

NATHANIEL PEFFER

See: FAR EASTERN PROBLEM; CHINESE PROBLEM; INTERVENTION; IMPERIALISM; EUROPEANIZATION.

Consult: For bibliographies, "Manchuria," compiled by W. A. Slade, American Academy of Political and Social Science, *Annals*, vol. clii (1930) 393, and "Manchuria—a Bibliography," compiled by Pearl Snodgrass in *Bulletin of Bibliography*, vol. xiv (1932) 170–71. *The Manchuria Yearbook, 1931* (Tokyo 1931); Clyde, P. H., *International Rivalries in Manchuria, 1689–1922* (2nd ed. Columbus, Ohio 1928); Young, C. W., *The International Relations of Manchuria* (Chicago 1929), and *Japan's Jurisdiction and International Legal Position in Manchuria*, 3 vols. (Baltimore 1931); Parlett, H. G., *A Brief Account of Diplomatic Events in Manchuria* (London 1929); Lattimore, Owen, *Manchuria, Cradle of Conflict* (New York 1932); Morse, H. B., and MacNair, H. F., *Far Eastern International Relations* (2nd ed. Boston 1931); Blakeslee, G. H., *The Pacific Area, an International Survey*, World Peace Foundation Pamphlets, vol. xii, no. 3 (Boston 1929) ch. iii; Yakhontoff, V. A., *Russia and the Soviet Union in the Far East* (New York 1931); Allen, G. C., *Modern Japan and Its Problems* (London 1928); Matsuoka, Yosuke, *Economic Co-operation of Japan and China in Manchuria and Mongolia* (Dairen 1929); Orchard, J. E. and D. J., *Japan's Economic Position* (New York 1930), especially ch. xxii; Crocker,

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MANCINI, PASQUALE STANISLAO (1817–88), Italian jurist and statesman. Mancini was born in Campania and studied law at the University of Naples. He soon acquired a great reputation as a jurist and professor of law. In the famous letters which he exchanged in 1841 with Mamiani he discussed the foundations of jurisprudence and especially penal jurisprudence, maintaining that moral justice must be combined with social utility and that the purpose of punishment is not only expiation but also prevention of crime. As deputy to the Neapolitan parliament Mancini composed on May 15, 1848, the solemn protest of the chamber against its dissolution by the Bourbon monarch and was forced to flee to Turin, where he soon became the most famous of the southern exiles, an outstanding lawyer and a professor of international law in the University of Turin, occupying a chair created especially for him. In his inaugural lecture on January 22, 1851, *Della nazionalità come fondamento del diritto delle genti*, he sought the vital principle of nationhood not in historical and natural factors, such as language, race and territory, but in the "consciousness of nationality." In advocating respect for every other nationality Mancini aimed to distinguish his theory of nationalities from imperialistic nationalism. The Italian school founded by Mancini applied the principle of nationality even to private international law, and its views were adopted in juridical form by the Italian Civil Code (1866), which regulates personal matters, family relations and the inheritance of aliens by the principle of national law rather than by that of domicile.

With Bluntschli and others Mancini was one of the founders of the Institute of International Law (1872) and became its president in 1873. In his political career Mancini was general secretary for justice at Naples in 1861, in 1862 minister of public instruction of the new Kingdom of Italy, from 1876 to 1878 minister of justice and from 1881 to 1885 minister of foreign affairs. He displayed great political and particularly legislative activity, combating capital punishment and the Jesuits, championing the abolition of imprisonment for debt and taking a great share in drawing up the new code of commercial law. As foreign minister he signed (May 20, 1882) the treaty of the Triple Alliance, which remained in force until the World War. Although he defended this treaty for political reasons he refused to join Austria and Germany in their demand for an internal reactionary policy, and he declared that Italy could never have considered the Triple Alliance as directed against England.

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Works: *Diritto internazionale: prelezioni* (Naples 1873).

Consult: Fusinato, Guido, *Il principio della scuola italiana nel diritto pubblico internazionale* (Macerata 1884), and *Il principio della scuola italiana nel diritto privato internazionale* (Bologna 1885); Carle, Giuseppe, "Pasquale Stanislao Mancini e la teoria psicologica del sentimento nazionale" in R. Accademia Nazionale dei Lincei, Rome, Classe di Scienze Morali, Storiche e Filologiche, *Memorie*, 4th ser., vol. vi (1889) 548–67; Ruffini, Francesco, "Nel centenario della nascita di Pasquale Stanislao Mancini" in *Nuova antologia*, 6th ser., vol. clxxxviii (1917) Supplement to issue for March 16, and "Il principio di nazionalità in Giuseppe Mazzini e in Pasquale Stanislao Mancini" in his *L'insegnamento di Mazzini* (Milan 1917) p. 17–58.

MANDAMUS is one of the "extraordinary" common law remedies, also designated prerogative writs, by which public administration is subjected to judicial control. As the name implies, it is a command, issuing from the sovereign to a subordinate jurisdiction, requiring the performance of a legal duty. Mandamus is defined by Blackstone as a command issuing in the king's name from the court of King's Bench and directed to any person, corporation or inferior court of judicature in the king's dominions, requiring the performance of some particular thing which appertains to an office and duty (*Commentaries*, III, 110). Mandamus was formerly used in the main to determine controversies regarding corporate acts or corporate or ecclesiastical office, while at the present time its principal use is in connection with acts or omissions of public officials. Originally, after the petition for the writ had been granted, the matter lay between the sovereign (acting in England through the court of King's Bench) and the subordinate, whose return to the writ, showing either com-

pliance or reason for non-compliance, was accepted as true, a practise that is similar in some respects to that which obtains in contempt proceedings at the present day. In course of time the person who had secured the writ (the relator) was permitted to question the truth of the return but only by a separate action against the respondent, and this is still the law in a few American states; but the logical development was to consolidate the mandamus proceeding with the action for the false return, and this was done in England, first, with limited application, by the statute of 9 Anne [c. 20 (1710)], then, generally, by the statute 1 Wm. IV [c. 21, sect. 3 (1831)]. In most states of the United States (frequently under statutory regulation) the pleadings in mandamus are in substance or also in form assimilated to other civil actions, leading to an issue of law or of fact upon which the right to relief is determined.

Mandamus is still available in the United States to enforce members' rights in corporations; this, however, constitutes a very minor and subordinate part of its function. Its chief use at present is to compel official action in accordance with law, where the public or a private interest demands such action. If a public interest is involved, the states are divided on the question whether proceedings may be instituted only by the attorney general or other public law officer or also by a private individual; if the official action is required only in the private interest, it is the aggrieved party who sets the proceeding in motion. Mandamus is thus the appropriate remedy where a license, consent or permit is withheld by an officer from a private party who has a right to it; in such a case adequate relief would be afforded neither by the possible liability of the officer to be removed from office by a superior for official misconduct nor by a possible cause of action against the officer for damages.

It is commonly said that only those official duties which are ministerial in character may be enforced by mandamus, and the term ministerial is then contrasted with the terms executive and discretionary. A distinction between ministerial and executive duty can be maintained only if the term executive is employed to refer either to the chief executive or to an official function the essence of which is the guidance or direction of a complex administrative course affected by varying circumstances. No mandamus has ever been applied for against the president of the United States. Occasionally the writ has been issued against a state governor, particularly where he was ex officio member of an official board, and probably in most of these cases the governor acquiesced in the proceeding since it afforded the readiest means of judicial determination of a controversial point of law. In the case of a resisting governor the proceeding encounters the difficulty that the chief executive is not, in relation to the courts, a subordinate officer and that the court has no power to enforce the writ against him by contempt process, which he might nullify by the exercise of his pardoning power. The question, however, is somewhat academic.

Where the function is executive in the sense that it consists in the direction of a complex administrative course, the mandamus can at most require the bringing about of a result, and the impossibility of specifying steps to be taken will render it difficult to treat failure to bring about the required result as disobedience to the judicial mandate; judicial control might thus come to mean that the court instead of commanding the officer would have to substitute itself in his place and assume administrative direction. In Illinois it was thus held that mandamus was not available to compel the mayor of Chicago to close liquor saloons on Sundays in compliance with the law of the state [People *v.* Dunne, 219 Ill. 346 (1906)]. While a number of official functions are plainly of this character, there will be considerable doubt as to others: can a court compel the institution of a criminal proceeding or a fair and equal assessment of property for taxing purposes, or do these functions elude judicial enforceability? Courts will differ greatly on the question of practicability; the Supreme Court of the United States held mandamus inappropriate to force the directors of a railroad company to establish a station [Northern Pacific Ry. Co. *v.* Washington, 142 U. S. 492 (1892)]; and it was the impracticability of judicial control that led to the legislation introducing administrative commissions for the control of public utilities.

In the case of Decatur *v.* Paulding [39 U. S. 497 (1840)] the Supreme Court held that the secretary of the navy cannot be compelled to allow a pension claim, but two years before it had been held that the postmaster general could be mandamused to comply with an award of the solicitor of the Treasury, to whose decision Congress had submitted a claim under a contract with the Post Office Department [Kendall *v.* United States, 37 U. S. 524 (1838)]. The postmaster's duty was treated as ministerial, while the allowance of the pension claim was treated

as discretionary, since it involved a controverted interpretation of a statute. If Decatur *v.* Paulding, which is considered a leading case, were to be understood as meaning that the necessity of interpreting a statute renders an official function discretionary, half the value of the remedy of mandamus would be lost, as subsequently recognized by the Supreme Court [Roberts *v.* United States, 176 U. S. 221 (1899)]. In only a few cases may it be assumed that it is the legislative intent that an administrative decision on a point of law should be final (pensions, public lands, possibly the classification of mail or of places in the civil service), and finality then means judicial non-interference, whether by mandamus or otherwise; but it can only be misleading to identify interpretation of a statute with discretion.

There are administrative functions which are discretionary in the sense that the official decision is left to be reached in accordance with the official's sense of wisdom, expediency or fitness. For a court to dictate the decision in such a case would be to usurp the administrative function; and this accounts for the principle that mandamus will not control administrative discretion. Administrative law, operating through mandamus, is greatly concerned with the problem of discretion. An unqualified discretion is rarely vested in officials exercising authority over private rights. Although the official may be free to decide one way or another, it is his clear duty to consider the case and to proceed to some decision, to decide fairly and without favor and to confine his discretion to legitimate considerations but to take into account all those that are legitimate. Without his discretion being touched he may be judicially controlled in all these respects. More than that: if discretion is based on a variety of factual considerations, it is reduced in so far as facts are undisputed, and skilful pleading may compel the official to admit or deny relevant facts; he must then be equally alert to bring out some decisional factor, which, since it is not bound up with definite provable facts, constitutes the irreducible minimum of his discretion. An apparent discretion may thus be resolved into lack of discretion; but a true discretion will defy analysis. Mandamus is thus the touchstone of administrative discretion.

The First Congress of the United States attempted to give the Supreme Court original jurisdiction in mandamus cases; but the court held in the famous case of Marbury *v.* Madison [5 U. S. 137 (1803)] that this could not be done, since the original jurisdiction of the Supreme Court was exhaustively defined by the constitution. The federal judiciary acts have withheld from the circuit and district courts the power to issue mandamus except in so far as the power may be necessary to the exercise of a jurisdiction otherwise possessed (as, for example, mandamus to a city council to levy taxes to satisfy a judgment recovered against the city in the federal court). By a historical accident, however, mandamus may be issued by the Supreme Court of the District of Columbia and is thus available against the heads of departments and bureaus whose seat of office is in Washington. That a local court should be the only one vested with this prerogative jurisdiction may appear as an anomaly; but Congress has acquiesced in this condition, led perhaps by consideration of the advantages resulting from concentration of the remedy of mandamus at the center of government, where are located the heads of departments, chiefs of bureaus, and commissions, who possess the most important determinative powers in the federal administration. If the lack of power of the district courts to issue mandamus has not been felt to be a serious handicap to justice, it is also because injunction may be made to serve the same purpose—restraining a postmaster from obeying an order of the postmaster general not to deliver instead of mandamusing him to deliver, as in American School of Magnetic Healing *v.* McAnnulty [187 U. S. 94 (1902)]. It is true that the courts may be inclined to treat functions vested in high officials as beyond judicial control on the ground that they are discretionary, and Decatur *v.* Paulding, above cited, may serve as a convenient precedent in this respect. The consent powers of the Interstate Commerce Commission under the Transportation Act of 1920 have so far been almost immune from control by mandamus; but with the growth of federal administrative powers over persons and property the use of the remedy is apt to become more rather than less frequent.

In the states mandamus belongs historically to the jurisdiction of the highest common law courts of original jurisdiction; by constitutional provision the power to issue it is also often given to the highest court; local courts (county courts and so on) do not issue it just as they ordinarily do not grant injunctions. In many states the cause is still entitled in the name of the people or the state on the relation of some individual against the defendant; in others the real party is the plaintiff. Some states still observe the

practise of a petition for and grant of a writ, either "peremptory" or "alternative" according to whether the issue is one of law only or also one of fact; in others the proceedings, including the pleadings, are assimilated to other civil actions. The trial of the fact is in some states by the court, in others by a jury; since the administrative function is ministerial, there is an entirely independent finding of facts by the court. Where there has to be a petition for the writ, there still exists a remnant of the doctrine that its grant rests in the sound discretion of the court, which may be governed by considerations of public policy; but the exercise of this discretion is reviewable by the appellate court. If a mandamus is issued, disobedience to it may be dealt with as contempt of court. The recalcitrant official also exposes himself to an action for damages; this liability may become important if a political issue is made between the executive and the judiciary, for the chief executive may shield the official from contempt process by the exercise of the pardoning power, but he cannot protect him from a judgment for damages.

In England at the present time mandamus is a relatively uncommon remedy. The Civil Judicial Statistics for England and Wales show for 1928 ten applications for the writ and the rule made absolute in eight cases and for 1929 twelve applications for the writ and the rule made absolute in two and discharged in nine cases. The slight recourse to mandamus may perhaps be accounted for by the common availability of explicit statutory remedies where private rights depend upon official action; and in some cases declaratory relief may be an adequate substitute for mandamus.

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See: ADMINISTRATIVE LAW; COURTS, ADMINISTRATIVE; WRITS, LEGAL; PROHIBITION, WRIT OF; CERTIORARI; INJUNCTION; PUBLIC OFFICE; SEPARATION OF POWERS.

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MANDATES. Mandatum was a term of Roman law designating a gratuitous agency. The word mandate is used in civil law countries today with the same significance and has even been incorporated into the common law, but with the more restricted significance of a gratuitous bailment [Cox *v.* Bernard (1763), 2 LD. Raym. 909]. In international relations the term has been employed in cases such as the Lebanon (1860), Samoa (1887), Crete (1898), Manchuria (1905), Morocco (1906), where a group of states has designated an individual or a state to administer territory. The mandates system as a recognized institution of international law, however, originated in article 22 of the League of Nations Covenant. It may be defined as a system for the administration of certain backward territories by advanced states which act as mandatories on behalf of the League of Nations according to the terms of a trust, embodied in the Covenant and the mandate, which provides for the tutelage of the inhabitants until they are able to stand by themselves.

This system represents the compromises arrived at by the Allied and Associated Powers in reference to the disposition of the extra European enemy territories which they had occupied during the World War. Annexation of these territories was barred by the public pronouncements of war aims on the part of allied leaders, and restoration to the enemy state was equally barred by such pronouncements, which had denounced German and Turkish colonial ad-

ministration. Direct international administration had not proved a success in such cases as Samoa and the New Hebrides. Most of the territories were in no condition to be recognized as independent, while the most advanced of them had been made the subject of secret treaties among the Allies, which divided them into spheres of interest. Thus the adroit proposal of General Jan Smuts, developed by him from suggestions of the British Round Table group and published shortly before the opening of the peace conference, was seized upon as a way out. This proposal offered a measure of satisfaction to the allied occupants desiring annexation, because they could be made mandatories of the territories they coveted; and it would also please the idealists, because supervision by the League was to be assured. The native inhabitants might gain consolation by the pledge of eventual self-determination. Even the Central Powers would find the system more palatable than outright annexation by their enemies.

Although the formulation of this plan was a work of practical statesmanship reconciling conflicts of the moment, the basic ideas of the compromise had been developing through a period of over three centuries in the experience of the people of European origin with the "backward peoples" of America, Asia and Africa. The humane ideas of Queen Isabella, Bartolome de las Casas and Francis de Victoria concerning the treatment of the Indians of New Spain had been so widely circulated by the antislavery and humanitarian movements in England, the United States and France in the late eighteenth and the early nineteenth century that all colonial powers eventually found it convenient to explain their mission as a trust for the benefit of the natives or for the good of the world. International conferences, such as that at Berlin in 1885 and at Brussels in 1890, gave more concrete form to the duties of this trust with reference to central Africa, and the United States upon entering the colonial field after the war with Spain insisted that the Philippines were "an unsought trust which should be unselfishly discharged ..." (President McKinley's message, December 3, 1900).

After the welfare of the inhabitants of dependencies had been admitted as an object of colonial activity, it was impossible to ignore the aspiration of such people for independence, especially as nationalism spread. The eventual self-determination of colonies was viewed with equanimity by nearly all British statesmen in the mid-nineteenth century, and although the renewed imperialism of the 1870's temporarily curbed the idea, it was again emphasized when the United States in acquiring oversea colonies reiterated the ideas of the Northwest Ordinance of 1787 for the government of contiguous colonies. The Senate resolution of February 14, 1899, which secured enough votes to ratify the peace treaty with Spain annexing the Philippines, asserted that American rule should "prepare them for local self-government . . . ." In the Jones Act of 1916 Congress asserted that "it is, as it has always been, the purpose of the people of the United States to withdraw their sovereignty over the Philippine Islands and to recognize their independence as soon as a stable government can be established therein . . . ."

The obvious inconsistencies in the application of these humane theories as well as the growing interest of all states in an open door for trade and investment in colonial areas had long suggested the need for international supervision over these imperial trustees and guardians. The idea was notably expressed in President Roosevelt's proposal in 1906 for a "mandatory of all the powers" to govern Morocco. The emphasis given to international control in the numerous plans for a League of Nations during the World War included such control of colonial administration, particularly in the memorandum of January 1, 1918, presented by George Louis Beer; this memorandum proposed that "backward regions are entrusted by international mandate to one state." The form of such safeguards was elaborated by the British Round Table group and by General Smuts in December, 1918, and a definite plan for such control was embodied in the resolution of the Council of Ten, drafted by General Smuts himself on January 30, 1919. This was utilized with only slight modification as article 22 of the League of Nations Covenant. By the Treaty of Versailles (art. 119) "Germany renounced all her rights and titles over her overseas possessions in favor of the Allied and Associated Powers," which thus became burdened with the function of selecting mandatories and proposing the terms of the mandates. Turkey relinquished by the Treaty of Lausanne (1923) all claims to her territories to be placed under mandate with the exception of the Mosul area of Iraq, which was left to subsequent determination. In fact the principal powers had proceeded to assignment of these mandates before the Treaty of Lausanne was concluded.

TERRITORIES UNDER MANDATE, 1928

TERRITORY	CLASS	MANDATORY	AREA (in square miles)	POPULATION (1926)
Iraq	A	Great Britain	116,511	2,849,282*
Palestine	A	Great Britain	9,010	887,000
Transjordania			20,000	240,000
Syria	A	France	52,000	1,416,954
Greater Lebanon			8,000	623,863
	Total Near East		205,521	6,017,099
Tanganyika	B	Great Britain	373,494	4,336,438
Ruanda-Urundi	B	Belgium	21,429	5,000,605
Togoland	B	Great Britain	13,240	187,959
Togoland	B	France	20,077	742,808
Cameroons	B	Great Britain	34,236	667,061
Cameroons	B	France	164,094	1,878,683
Southwest Africa	C	Union of South Africa	322,393	235,804
	Total Africa		948,963	13,049,358
Western Samoa	C	New Zealand	1,133	37,865
Nauru	C	Great Britain, Australia and New Zealand	9	2,217
New Guinea and south Pacific islands	C	Australia	91,300	421,050
North Pacific islands	C	Japan	830	54,421
	Total Pacific		93,272	515,553
	Grand Total		1,247,756	19,582,010

* As of 1919.
Source: Wright, Q., *Mandates under the League of Nations* (Chicago 1930) p. 629.

The position of the mandatory state resembles that of a trustee rather than that of a proprietor, in that its administration is not for its own advantage but for the benefit of the inhabitants of the mandated areas and the members of the League of Nations. Thus the Council of the League, advised by the Permanent Mandates Commission, has meticulously examined the accounts of mandated territories to see that public income derived from the territory is expended for the benefit of the territory and not utilized for the mandatory's own purposes. Furthermore the mandatory is not entitled to utilize the mandated territory for military recruiting, although because of Clemenceau's insistence native troops from French Togoland and the Cameroons may be used in case of general war for the defense not only of the mandated territory but of outside territories of the mandatory power. Moreover the mandatory is not to gain advantage in trade or investments for its nationals in the mandated areas, except in class C mandates, but is obliged to maintain an open door to all members of the League and, in pursuance of treaties subsequently concluded, to the United States as well.

The position of the mandatory state resembles that of a tutor, or guardian, since it is obliged to administer the most backward of these areas so as to protect the natives from such abuses as the slave trade, the arms traffic and the liquor traffic and since eventual self-determination is the goal for all of the mandated areas. The Covenant makes it clear that the mandates system applies only to territories "which are inhabited by peoples not yet able to stand by themselves," that such peoples are under "tutelage," or guardianship, and that the character of the mandate must differ "according to the stage of development of the people" and other conditions. It suggests three distinctive types of territory, which have been designated A, B and C mandated areas.

In regard to the A areas the Covenant states that "certain communities formerly belonging to the Turkish Empire have reached a stage of development where their existence as independent nations can be provisionally recognized subject to the rendering of administrative advice and assistance by a mandatory until such time as they are able to stand alone. The wishes of these communities must be a principal consideration in the selection of the mandatory." These communities were organized under three mandates,

Iraq, Syria and Palestine. In the case of Iraq the mandate was in the form of a resolution of the Council, which accepted the terms of the "treaty of alliance" between Great Britain and Iraq together with certain undertakings by Great Britain in connection therewith, as giving effect to article 22.

The British government announced on November 4, 1929, that it proposed to "recommend Iraq for admission to membership of the League of Nations in 1932," thus terminating the mandate and completing the self-determination of that state. This gave the Council an opportunity to define the conditions which justify the presumption that a mandated territory is ready for independence. The Permanent Mandates Commission found that these conditions had been met by Iraq and on October 3, 1932, by vote of the Assembly, Iraq was admitted to the League. According to a resolution of the Council, this terminated the British mandate from that date. France announced at a meeting of the Permanent Mandates Commission in 1931 that "the present progress of evolution points to the termination of the mandate for Syria and the Lebanon at a not very distant date."

Although Palestine is in some respects the most advanced of the areas, there is no immediate prospect of the termination of the mandate, because of the incorporation of the provision for a national home for the Jewish people. This proposal, put forward by Great Britain in the Balfour Declaration of November 2, 1917, and subsequently accepted by most of the Allied Powers, including the United States, contemplates free access to Palestine for Jewish immigrants. It is, however, somewhat difficult to reconcile with the "provisional recognition" of Palestine as an independent nation in view of the vigorous opposition of the Arabs, who constitute three fourths of the population of Palestine. This circumstance has prevented the development of a legislative body for Palestine, since such a body if representative of the population would be dominated by Arabs, who would frustrate the Zionist program.

The B mandated territories are described by the Covenant as "other peoples, especially those of Central Africa, [who] are at such a stage that the mandatory must be responsible for the administration of the territory under conditions which will guarantee freedom of conscience and religion, subject only to the maintenance of public order and morals, the prohibition of abuses such as the slave trade, the arms traffic and the liquor traffic, and the prevention of the establishment of fortifications or military and naval bases and of military training of the natives for other than police purposes and the defense of territory, and will also secure equal opportunities for the trade and commerce of other members of the League." There has been no talk of immediate self-determination for any of these peoples, although the League has favored indirect administration which will educate the natives in self-government and has hesitated to approve federation of Tanganyika with neighboring British colonies in east Africa.

The territories under C mandate are described in the Covenant as follows: "There are territories, such as Southwest Africa and certain of the south Pacific Islands, which, owing to the sparseness of their population or their small size, or their remoteness from the centers of civilization or their geographical contiguity to the territory of the Mandatory, and other circumstances, can be best administered under the laws of the Mandatory as integral portions of its territory, subject to the safeguards above mentioned in the interests of the indigenous population." The fact that these areas are to be administered "as integral portions of [the mandatory's] territory" and that the open door does not apply on the theory that it is not a safeguard "in the interests of the indigenous population" (a reservation made on the insistence of the British dominions) suggests that the day of their self-determination is remote.

Japan although benefiting by these provisions with respect to her mandated islands of the north Pacific made a reservation against the exclusion of the open door requirement in these areas, and the United States has declined to negotiate treaties recognizing the mandates of the British dominions unless they will apply the open door provision.

The Permanent Mandates Commission, about which the League's supervision centers, has eleven members selected by the Council for their "personal merit and competence," the majority from non-mandatory states. The Commission meets at least twice a year, on which occasions it considers the annual reports of the mandatories and cross questions their accredited representatives, who have often been high officials from those areas. The Commission also deals with any petitions that may be presented (through the mandatory) by the inhabitants of mandated territory or (on behalf of those inhabitants) from other quarters. Its recommendations are sub-

mitted to the Council, which usually approves them without modification. The mandatory powers not represented on the Council are entitled to send ad hoc representatives during the consideration of mandates questions by the Council; acceptance of the Council's resolutions on the subject therefore involves acceptance by all the mandatory powers, which thus become bound by the resolution. The Council's resolutions often include general questions concerning mandatory law, policy or procedure as well as recommendations relating to a particular mandated area.

The sanctions of the system, like those of all international law, are primarily the good faith of the nations and the pressure of public opinion; but because of the regularity of supervision, the extensive publicity and the facilities for determining obligations with precision these sanctions are more effective than in some other fields of international law.

Although the Assembly has less responsibility with respect to mandates than does the Council, one of its committees reviews the working of the system and the Assembly regularly discusses the problem at its annual meetings and passes resolutions usually supporting the system against possible encroachment by the mandatories. A section of the League Secretariat devotes itself to mandate problems and keeps the members of the Commission supplied with various sources of information about the areas and the reactions of public opinion toward the system.

Each of the mandates provides that the mandatory must submit to the Permanent Court of International Justice on application of any member of the League any questions relating to the interpretation or application of the mandate.

The Permanent Mandates Commission has felt that its powers were not always adequate to secure the information it needed in its work, but the suggestions that the Commission might be authorized to visit any of the areas, grant an oral hearing to petitioners or greatly elaborate the questionnaire to be answered by the mandatory in its annual report have not been favored by the Council. In practise, however, the Council has sent commissions to both Iraq and Palestine; members of the Permanent Mandates Commission have listened unofficially to the grievances of petitioners, notably on the occasion of the special session at Rome in 1926 in regard to Syria; and the Commission has felt no restriction in the questioning of accredited representatives. The system relies mainly on these practical devices for assuring information about the areas, publicity and contacts between the administrations and the League authorities. It does constitute probably the most thoroughgoing international supervision of national territorial administration yet devised.

The extent of legal authority of the League over the mandatory is not, however, precisely defined. The Permanent Mandates Commission and the Council have both stated unequivocally that the mandatory is not sovereign of the mandated territory, and this position has been accepted by the mandatories. It has not been decided, however, who is sovereign and the opinions of jurists differ. The League of Nations, the Principal Allied and Associated Powers, the mandated communities themselves and even the mandatories or some combinations of these have all been named as sovereign by different writers; and others have suggested that sovereignty is suspended in the territories for the time being. It seems clear that the Council of the League has authority to remove a mandatory and appoint a new one after a definite breach of the mandate, which presumably only the Permanent Court of International Justice can declare to have occurred. It also appears that the Council decides upon the conditions which justify a mandatory in terminating its mandate on the ground that the community is ripe for independence. Furthermore the Assembly may by a two-thirds vote admit a mandated community to the League and thereby determine that for League purposes the community is "fully self-governing" and therefore no longer subject to mandate. Article 22, like other articles of the Covenant, is subject to amendment by a majority of the members of the League, including all the members of the Council; and thus by a similar process it could be modified or terminated. It seems to be accepted by the Permanent Mandates Commission that the Principal Allied and Associated Powers, in whose favor the territory was originally renounced by the peace treaties and who made the original assignment of mandates, passed out of the picture upon the performance of that function. These considerations suggest that sovereignty of the areas is vested in the League, acting through the Covenant amending process, and is exercised by the mandatory with the consent of the Council for eventual transfer to the mandated communities themselves. This uncertainty of interpretation arises primarily from the fact that article 22 was not carefully drawn by experts but was inserted in the Covenant by

the Council of the Ten, which was actuated largely by political considerations.

The importance of the mandates system lies in its claim to provide methods more adequate than those previously employed for adjusting the relations of the highly industrialized capital exporting communities which have called themselves advanced and of the agricultural capital importing communities which have been called backward. As the quantity of backward territory remaining in the world has declined and the demand for new markets and sources of raw materials by the advanced countries has increased, the methods used for exploiting these areas have become more dangerous to the natives and the rivalries of the advanced states have become a menace to peace. Furthermore with the development of communications, national consciousness and methods of passive resistance among the backward peoples the problem of maintaining order and control in these areas by colonial administration based on military force has become more difficult. The mandate system claims to be an advance in that it subordinates the political and economic interests of the administration to the interests of the inhabitants of the area and of the world as a whole, in that it provides a mass of authoritative data for comparison of administrative methods and for the development of adequate standards of administration and in that it assures continuous disinterested international supervision and publicity, thus minimizing the probability of abuse of power by the administering state.

It is difficult to generalize upon the success of the system in the ten-year period of difficult readjustment in which it has been functioning. Serious disturbances have occurred in Southwest Africa, Syria, Western Samoa and Palestine. In each case the Council of the League has published a detailed report dealing with the facts and responsibilities, and some adjustment has been made as a result of the publicity. Numerous reports of abuses have been investigated and recommendations made by the Council have been acted upon by the mandatory. Observers report that the conditions in mandated areas compare favorably with those in neighboring colonies of similar type; and the meager statistics available indicate that in population growth, health, appropriations for native welfare, trade and investments progress of the mandated territories has been satisfactory. The detailed attention given by the Commission to the vital problems of native land tenure, wages, health and native participation in the administration has thrown light upon the applicability of recommended standards in the widely diverse conditions represented by the fourteen mandated territories. The experience of Iraq indicates the high probability that a peaceful method for effecting the transition from dependence to independence has been achieved.

The natives of the more backward mandated territories have little organized opinion, and it is difficult to know their attitude toward the system. Nationalist aspirations in the more advanced regions have caused some restiveness, as in the case of the Arabs, who have been disappointed in their hope of immediate independence and feel resentment at the Zionist policy and at the division of their territory between French and British mandates in spite of the desire for union expressed to the King-Crane Commission in 1919. Former German settlers in some of the areas resent the fact that in most cases they have failed to get compensation for their land. The other white settlers, for the most part nationals of the mandatory power, chafe at the limitations imposed by the mandate upon their exploitation of natives and frequently express a desire for annexation of the territory by the mandatory. Several of the mandatories have occasionally manifested a desire to interpret the competence of the League organs in a restrictive manner and to develop the mandated territories as parts of their empires. The vigorous French insistence upon the right to recruit troops for general defensive purposes in its west African mandated territories has also been commented on as hardly in accord with the mandate principle.

In some cases possession of a mandate even without actual sovereignty has been of strategic and economic value to the mandatory. Thus the mandate for Palestine assures Great Britain a foothold on the north bank of the Suez Canal. This will probably be prolonged by the inherent difficulties of the Zionist policy, which is likely to delay the self-determination of this area longer than that of the other A mandated territories. The possession by Great Britain and France of mandates in Iraq and Syria has made it possible for these two nations to control the development of oil resources in the Mosul area and the course of pipe lines to the sea, although the United States succeeded after protracted negotiations in gaining the right for American oil companies to participate in the exploitation of these fields.

In spite of these criticisms and these instances

of imperial advantage gained from the possession of mandates the mandatories have formally exhibited entire good faith and have generally respected the resolutions of the Council in regard to mandates.

Recognizing the inevitable economic advantages which a mandatory will enjoy, no matter how carefully the open door principle is observed, the Permanent Mandates Commission has kept a particularly sharp watch over customs, investments, loans and concessions in mandated territories in order to check any abuse, conscious or unconscious, of the mandatories' advantages.

The opinion of the world has steadily become more favorable to the system, as is evidenced particularly by juristic, historical and humanitarian writers. The system was at first greeted as a thin veil for annexation, especially in the United States, Germany and Soviet Russia, and Communist organs have continued to brand it as the latest expression of imperialistic exploitation. The initial skepticism in the United States has been greatly modified by the study of the actual functioning of the system; and German opinion, particularly since Germany has become a member of the Council and a German has been a member of the Permanent Mandates Commission, has tended to support the system and vigorously to oppose any steps leading toward annexation of the areas or neglect of the principles of the Covenant. Italy as the only Principal Allied Power without a mandate has manifested great interest in the system and her representatives have exerted themselves to maintain its integrity. The Assembly, dominated by nonmandatory states and by states without colonial responsibilities, has been even more anxious than the Council to prevent whittling down the mandate system; and the Commission as a non-political and impartial body has taken its duties seriously and by the care, intelligence and energy of its members has made the League supervision a real force and has added to the stock of human knowledge on the problems of colonial administration.

The question of extending the administrative aspects of the system to other areas is less important than the extension of its principle. That system now embraces typical areas; if more were added, the Commission's administrative duties might swamp its scientific and investigatory functions. Nevertheless, the advantage of League supervision will doubtless be considered if a future political exigency should suggest a change in the status of a dependency. The League's major work, however, is to focus attention on the problems, to coordinate investigations and experiments toward a solution and to see that the mandated areas are administered in the interests of the natives and of the world according to the best available learning and experience, thus setting examples for the administration of backward areas everywhere. In this work it has during its first ten years achieved a high measure of success.

QUINCY WRIGHT

See: LEAGUE OF NATIONS; IMPERIALISM; GREAT POWERS; BACKWARD COUNTRIES; ANNEXATION; PROTECTORATE; COLONIES; CONCESSIONS; ZIONISM; WORLD WAR.

Consult: League of Nations, Secretariat, Library, *List of Works Relating to the Mandates System and the Territories under Mandate Catalogued in the Library of the League of Nations* (Geneva 1930); League of Nations, Permanent Mandates Commission, *Minutes*, 1st to 20th session, vols. i–xx (Geneva 1921–31); Lindley, M. F., *The Acquisition and Government of Backward Territory in International Law* (London 1926); Smuts, J. C., *The League of Nations* (London 1918); Ciobanu, Georges, *Les mandats internationaux* (Paris 1921); Lugard, F. D., *The Dual Mandate in British Tropical Africa* (2nd ed. London 1923), and "The Mandate System and the British Mandates" in Royal Society of Arts, *Journal*, vol. lxxii (1923–24) 535–50; Stoyanovsky, J., *La théorie générale des mandats internationaux* (Paris 1925); White, Freda, *Mandates* (London 1926); Rodríguez de Gortázar, J. M., *Los mandatos internacionales en la política colonial* (Madrid 1928); Palacios, Leopoldo, *Los mandatos internacionales de la Sociedad de Naciones* (Madrid 1928); Rees, D. F. W. van, *Les mandats internationaux, le contrôle international de l'administration mandataire* (Paris 1927), and *Les mandats internationaux, les principes généraux du régime des mandats* (Paris 1928); Maanen-Helmer, Elizabeth van, *The Mandates System in Relation to Africa and the Pacific Islands* (London 1929); Gerig, Benjamin, *The Open Door and the Mandates System* (London 1930); Margalith, A. M., *The International Mandates*, Johns Hopkins University, Studies in Historical and Political Science, extra vols., n.s., no. viii (Baltimore 1930); Wright, Quincy, *Mandates under the League of Nations* (Chicago 1930); Rappard, W. E., "The Practical Working of the Mandates System" in British Institute of International Affairs, *Journal*, vol. iv (1925) 205–26; Orts, Pierre, "Le système des mandats de la Société des Nations" in *Revue de l'Université de Bruxelles*, vol. xxxii (1926–27) 494–524; Williams, W. L., "The State of Iraq: a Mandate Attains Independence" in *Foreign Policy Reports*, vol. viii (1932) 184–94; Evans, L. H., "The Emancipation of Iraq from the Mandates System" in *American Political Science Review*, vol. xxvi (1932) 1024–49.

MANDEVILLE, BERNARD DE (1670–1733), British physician and moralist. Mandeville was born at or near Rotterdam, took his degree in medicine at Leyden in 1691 and shortly after-

ward emigrated to England. His most important work, *The Fable of the Bees: or Private Vices Public Benefits*, was one of the most widely read and controverted books of the eighteenth century. Mandeville's thought is scarcely a coherent whole, although it embraces many clearly developed ideas of considerable importance in ethics, psychology and economics. He professes to accept the traditional conception that virtue consists solely in self-denial or the victory of reason over the passions. Hence the paradox of the *Fable*, which assigns to the "vices" of men—their pride, self-interest and desire for material well being—the chief responsibility for the prosperity of modern societies. Mandeville's psychology is egoistic: reason is everywhere the tool of the passions and the passions are rooted in self-love. What passes for unselfishness in human nature is the result of social pressure working upon subtle forms of self-love: "Moral virtues are the political offspring which flattery begot upon pride" (*Fable* I, 51). Significant for the history of economic theory is Mandeville's insight into the importance of self-interest in the economic order. He sees that the satisfaction of the wants of a complex society results from the unwitting cooperation of innumerable individuals each working for his own interest; and he asserts that the proper balance of these interests on which economic well being depends is most likely to be maintained when they are least interfered with by government or charitable agencies. Here he clearly anticipates the basic philosophy of laissez faire. Other less important contributions to economic thought are his perception of the logical nexus between self-interest and the division of labor and his defense of luxury. Mandeville's work was well known to Adam Smith and must have influenced the shaping of Smith's economic doctrines. His analysis of human nature was likewise influential, although in a different way. By showing the incompatibility between the orthodox conception of virtue and what he regarded as the springs of human conduct he acted as a powerful stimulus to ethical inquiry; and the later psychological moralists, such as Hume, Adam Smith and Helvétius, even when they do not agree in full with Mandeville's egoistic analysis owe much to the acuteness with which he laid bare the ramifications of self-love.

GLENN R. MORROW

Important works: *The Fable of the Bees* (2 pts., London 1714–29; modern edition by F. B. Kaye, 2 vols., Oxford 1924); *Free Thoughts on Religion, the Church and National Happiness* (London 1720); *An Inquiry into the Origin of Honour* (London 1732).

Consult: Kaye, F. B., Introduction to his edition of *The Fable*, vol. i; Robertson, J. M., *Pioneer Humanists* (London 1907) 230–70; Sakmann, P., *Bernard de Mandeville* (Freiburg i. Br. 1897); Schatz, A., in *Vierteljahrschrift fur Sozial- und Wirtschaftsgeschichte*, vol. i (1903) 434–80; Lamprecht, S. P., "The Fable of the Bees" in *Journal of Philosophy*, vol. xxiii (1926) 561–79; Morize, André, *L'apologie du luxe au XVIIIe siècle* (Paris 1909).

MANEGOLD OF LAUTENBACH (*c.* 1060–*c.* 1103–19), German monk and political theorist. Manegold was born in Germany, at an early age entered the monastery of Lautenbach in Alsace and after the demolition of the monastery by supporters of Henry IV spent some years in wandering until he found refuge at the monastery of Raitenbuch in Bavaria. By 1090 he had returned to Alsace; there he helped to found the monastery of Marbach, of which he was *praepositus* after 1096.

Manegold, whose principal treatise, *Ad Gebehardum* (dedicated to Archbishop Gebhard of Salzburg), was written probably in 1085, was the most incisive of the writers who defended the action of Hildebrand in deposing Henry IV. In so doing he was primarily concerned not with the question of the authority of the spiritual power over the temporal but with the principle that the authority of the secular ruler is derived from the community. Far from holding a low view of the political order Manegold asserts quite dogmatically that it is derived from God. Whatever may have been the attitude of others, Manegold treats the royal authority with the profoundest deference, for its purpose is to maintain justice. He is clear that the function of the temporal power is a moral one. But he draws a sharp distinction between the office and its occupant, refusing to admit that the divine nature of the former involves unlimited power and irremovability on the part of the king (*Ad Gebehardum*, 30, 39, 43). Indeed he emphatically repudiates the doctrine of Gregory the Great that the ruler must always be obeyed. While suggesting the possibility of a different interpretation of Gregory's words Manegold unhesitatingly declares that if the pope really held such a view, he was wrong (45).

His own view is positively set out in the well known passage (30) where he says abruptly that the king who plays the tyrant has forfeited his right to his great office and that the people are free from all obligation to obey him, for he has violated the agreement or contract (*pactum*) by

virtue of which he was appointed. With characteristic plainness of speech he supports this by an analogy with the relation between the swineherd and the man who entrusts his swine to him for a suitable wage. If the swineherd slays or steals the swine, the owner will refuse to pay the wage and will dismiss the swineherd from his service. As far as is at present known, this is the earliest general statement of the theory of a contract or agreement between the people and the ruler, which finds its classical expression in the Declaration of Rights in the English Revolution of 1688. But Manegold is only putting into precise phrase a conception which is implicit in the conditions of coronation as early as the ninth century and is the fundamental principle in the feudal relation of lord and vassal. Manegold's words represent the normal conception of the Middle Ages, the crystallization of a whole movement of political principles and conditions into one great phrase.

A. J. CARLYLE

Works: The *Ad Gebehardum Liber* has been ed. by Kuno Francke in the Monumenta Germaniae Historica, Libelli di Lite, vol. i (Hanover 1891) p. 300–430.

Consult: Carlyle, A. J. and R. W., *A History of Mediaeval Political Theory in the West*, 5 vols. (Edinburgh 1903–28) vols. iii–iv; Poole, R. L., *Illustrations of the History of Medieval Thought and Learning* (2nd ed. London 1920) p. 203–04; Mirbt, Carl, *Die Publizistik im Zeitalter Gregors VII.* (Leipsic 1894); Stead, M. T., "Manegold of Lautenbach" in *English Historical Review*, vol. xxix (1914) 1–15.

MANGOLDT, HANS KARL EMIL VON (1824–68), German economist. Mangoldt was *Privatdozent* at the University of Göttingen in 1855 and in 1862 he was appointed professor of economics at the University of Freiburg. Mangoldt's significance lies in the fact that in the period from 1855 to 1868, when the historical school of economics was exercising a predominating influence in Germany, he kept alive the interest in theoretical economics and, in a series of important books, furthered the systematic treatment of economic theory. His general approach was that already followed by Hermann; that is, with all his high regard for the importance of classical economics he examined its doctrines in the light of economic reality and modified them accordingly. Mangoldt's doctrines exercised considerable influence especially on the theories of rent and profit. He was the first in Germany to point out that rent is in no way a special phenomenon confined to agriculture and mining but an element of income which may accrue to any factor of production whenever the latter enjoys a particular advantage in the market. Marshall later readopted this line of reasoning, although with more cautious formulation. He distinguished sharply between profit and interest and regarded the former as a payment for risk and entrepreneurial ability, thus constituting an independent category of income. Mangoldt was among the first to use the graphic method in illustrating the process of price determination; notable too is his use, although in somewhat obscured terms, of the concept of elasticity of supply and demand in the theory of international trade.

KARL DIEHL

Chief works: *Die Lehre vom Unternehmergewinn* (Leipsic 1855); *Grundriss der Volkswirtschaftslehre* (Stuttgart 1863; 2nd rev. ed. by F. Kleinwächter, 1872); *Volkswirtschaftslehre* (Stuttgart 1868).

MANIN, DANIELE (1804–57), Italian statesman. A liberal in politics and economics, Manin promoted the enthusiastic welcome tendered by Venice to Richard Cobden on his visit in 1847. Before 1848 he favored legal resistance to Austrian oppression in Lombardy-Venetia, but after the outbreak of the revolution he headed the provisional republican government of Venice. In 1849 he maintained the military campaign against Austria at a high pitch, ruling the republic with dictatorial powers throughout the struggle. After the fall of Venice in August, 1849, he fled to Paris, where he passed his last years in poverty as a teacher of Italian.

During his exile he adopted monarchist views, advocating Italian unification under the house of Savoy, which had inaugurated in Piedmont a sound liberal and national policy. The change in Manin's views involved him in heated controversy with Mazzini. He exerted an extremely important influence in the reorientation of the national movement. Garibaldi and other illustrious republican patriots followed Manin, who became the first president of the Società Nazionale. His work in the successful liberation struggle which began in 1859 was of inestimable value.

PIETRO SILVA

Consult: Trevelyan, G. M., *Manin and the Venetian Revolution of 1848* (London 1923); Errera, Alberto, *Daniele Manin e Venezia 1804–53* (Florence 1875).

MANN, HORACE (1796–1859), American educator. Mann was born in Massachusetts and educated in district schools and at Brown Uni-

versity, where he taught for two years. He then took up law and entered politics, sitting in the Massachusetts legislature from 1827 to 1836 and in Congress from 1848 to 1853. He was early interested in social reform; he sponsored legislation against intemperance and gambling and for state care of the insane. Mann was directly responsible for the act creating the state Board of Education and served as the board's first secretary from 1837 to 1848, in which capacity he was responsible for the twelve volumes of its annual reports. Impressed by the need of competent teachers in public schools, he championed the movement for normal schools; and it was as a result of his efforts that the first normal school was opened at Lexington in 1839, financed in part by the state and in part by Mann's friend Edwin Dwight of Boston. In 1843 the legislature passed resolutions advocated by Mann providing for the support of normal schools and school district libraries. Mann founded and edited the *Common School Journal* from 1838 to 1848. From 1852 until his death he served as the first president of Antioch College.

Mann emphasized what are regarded as essentials by modern educators: that the first condition of education is health; that school reform is always schoolmaster reform; that training rather than instruction is the true method; that the development of mind and character by a wholesome moral training and what is today called mental hygiene is the aim of true education; that instead of competition the spirit of cooperation and democratic ideals should be developed by the public schools; that a method which makes good schools but bad pupils is folly.

A disciple of Combe and a phrenologist, Mann was strong in logic but weak in psychology. Although in a conflict with conservatives which demanded agility and cleverness he was impeded by a ponderous rhetoric he had great influence through lectures and writings. He was a great teacher who did significant work in improving public school education, and his great service for the training of teachers is likely to be recognized as his permanent contribution to social progress.

WILLIAM H. BURNHAM

Works: *Life and Works*, ed. by George C. Mann, 5 vols. (Boston 1891).

Consult: Mann, B. Pickman, "Bibliography of Horace Mann" in United States, Bureau of Education, *Report of the Commissioner, 1895–1896*, vol. i (Washington 1897) p. 897–927; Burnham, W. H., in *School and Society*, vol. xiv (1921) 109–15; Hubbell, G. A., *Horace Mann, Educator, Patriot and Reformer* (Philadelphia 1910); Martin, George Henry, *The Evolution of the Massachusetts Public School System* (New York 1894).

MANNING, HENRY EDWARD (1808–92), English cardinal and social reformer. Manning, an Anglican pastor from 1832, became affiliated with the High Church movement and in 1851, six years after Newman's secession, was converted to Catholicism. In 1865 he was appointed archbishop of Westminster. Manning's main contribution to the Catholic revival was his social work undertaken in accordance with his deliberate policy of reawakening the Catholic masses in England. Consisting chiefly of poor Irish immigrants in the industrial cities and seaports, the masses had been generally out of sympathy with the previous church leaders, who were mostly drawn from a few aristocratic families.

As a result of his experience with the immigrants, particularly in his work of establishing and maintaining Catholic schools, Manning became a passionate crusader against intemperance. One of the foremost advocates of temperance in England, he founded the League of the Cross to promote the cause and organized it throughout the country with great success. His constant endeavors to assist the poor won him the sympathy of social reformers who were strongly prejudiced against the church and greatly increased Catholic influence in England. In 1884 he sat with the prince of Wales in the Royal Commission on the Housing of the Working Classes. In spite of much criticism from other Catholics he cooperated in the social reform activities of such religious movements as the Salvation Army and openly supported W. T. Stead when the latter was imprisoned in 1885 for his sensational exposure of the white slave traffic. As Anglican archdeacon before 1851, he had done much work among agricultural laborers and during the 1870's he gave powerful support to the Agricultural Labourers' Union. His lecture "The Rights and Dignity of Labour" brought him into close touch with the younger labor leaders who were organizing the dockers and other unskilled workers. During the London dock strike of 1889 his letters in support of the dockers induced them to solicit his mediation; the final settlement of the strike was due entirely to his efforts. Manning was successful in emancipating the English church from the domination of the conservative landowners. According to his own statement he learned his radical politics from "Moses and St. Paul" and had "compassion on the multitude because they have nothing to eat."

He became closely associated with the similar activities of Cardinal Gibbons in America and together with him had a direct influence upon Pope Leo XIII's encyclical of 1891 on the condition of the working classes, which laid down the program of modern Catholic social reform. This encyclical fully endorsed Manning's championship of the trade unions and his demands for the regulation of female and child labor, for shorter working hours, for public relief in times of distress and unemployment and for state interference to enforce justice in economic relations. Like Leo XIII, Manning condemned socialism as a denial of the right of private ownership, insisting that true social reform lay in a better distribution of property.

DENIS GWYNN

Works: Some of Manning's writings and lectures on non-religious subjects are collected in *Miscellanies*, 3 vols. (London 1877–88).

Consult: Hutton, A. W., *Cardinal Manning* (London 1892); Purcell, E. S., *Life of Cardinal Manning*, 2 vols. (London 1895); Leslie, Shane, *Henry Edward Manning* (London 1921); Lemire, Jules, *Le cardinal Manning et son action sociale* (Paris 1893); Bodley, John E. C., *Cardinal Manning . . . Three Essays* (London 1912) p. 1–65; Smith, H. L., and Nash, V., *The Story of the Dockers' Strike* (London 1889); McEntee, G. P., *The Social Catholic Movement in Great Britain* (New York 1927).

MANORIAL SYSTEM. The manorial system was a type of economic, social and administrative organization based on land tenure, which bound together in a nexus of interdependent relationships the landowning class and the land tilling peasants. At the same time it represented a unit responsible for performance of political and communal obligations. The nucleus of the organization was the manor, to which were attached a number of dependent peasant holdings. The lord reserved for his own immediate use what as a rule amounted to only a small section of his total land, the remainder being parceled out among the peasants in return for services and dues which were applied to the maintenance of the lord or to the upkeep of the manor. The economic activities of the manor in its wider reaches comprised work in the fields, in the meadows, in the pastures and in the forests; gardening, wine growing, beekeeping and fishing; and in addition conversion of the various natural products into usable commodities. Thus the requirements not only of the lord's household but of the smaller units were practically always guaranteed; and favorable conditions might result in a surplus.

To an age of economic decentralization and barter economy the manorial system was well adapted. Despite the occasional opportunities for trading with the outside world the manor was essentially a self-sufficing unit in which the requisite economic goods were produced within a more or less extended domain of interconnected agricultural enterprises. From a political point of view as well the manorial technique proved itself particularly useful in defending the country, in administering and executing justice, in raising taxes and in the other problems of administration which beset a highly localized and decentralized political system. Thus the institution of the manor becomes in a very real sense the reflection of feudalism in its period of expansion during the early Middle Ages and later during its period of gradual decline.

With the passing of antiquity the manorial system established itself throughout wide areas of Europe, contributing to the progress of agriculture and to the regulation of social life. The germs of manorial organization are discernible in the typical late Roman latifundia, the nucleus of which consisted of consolidated areas of cultivation worked by slaves and grouped around a central villa. On condition that he continue to contribute his services to the estate the slave might be granted a separate house and a certain amount of land, thus becoming a *servus casatus*, while the small free tenant (colonus) might be allowed to rent a parcel of ground, sometimes with premises. The settlement of moderate size which thus arose around the villas did not, however, constitute in Roman law an actual village community (*universitas*), for which definite limits were prescribed. Under the empire the colonate came to fill an increasingly significant function, especially upon the adoption by the government of the program of fostering internal colonization as a means of revitalizing the native strain. The owners of the large estates were charged also with the administration of taxes and justice; and after the legislation of Constantine, which converted free payers of land taxes into *glebae adscripti* bound to the soil, the power of the great landowners steadily increased, until by the end of the Roman period they exercised control over both consolidated and scattered domains. The deep influence of these two types of manorial organization is repeatedly revealed during the early Middle Ages in Italy, Gaul, Spain, southern Britain and along the Rhine. In spite of the violent disruption of property caused by the northern invasions the economic forms of the

Roman agrarian system displayed striking powers of persistence. The same lines of evolution are traceable in the Eastern Byzantine Empire, although certain of the emperors friendly to the peasants—such as Heraclius and Leo III, the creator of peasant rights—attempted on occasion to protect the free farming population that was liable to military service.

At the same time it is apparent that a deep influence was exerted on the mediaeval agrarian system by the migrations of the Germanic tribes, however greatly hypotheses may vary as to the type of land tenure obtaining among these tribes. Certain scholars of a former generation, notably such German legal and economic historians as G. von Maurer, H. Brunner and A. Meitzen, maintained that the essential features of the Germanic system of land tenure were the free mark association (*Markgenossenschaft*) and the village community (*Dorfgemeinde*) and that the manor was the outgrowth of a later development which took place only after the final period of tribal consolidation. Other scholars, particularly Denman Ross, Seebohm and Fustel de Coulanges, have insisted that the manorial system derived from conditions prevailing during the late Roman period. R. Hildebrand maintained that the origins of the system were contemporary with the primitive transition to agriculture, while the careful researches of Dopsch would likewise indicate that its origins are to be sought already in the early Germanic period. But even if it is true that the Germanic tribe possessed colonized slaves resembling the Roman coloni, it is nevertheless difficult to prove that these tribes had a well developed organization comparable with the manorial institution. The most convincing hypothesis perhaps is that the institution of the manor combined elements deriving from late Roman days, particularly the well organized system of the large estate, with the more vigorous forms of corporate activity characteristic of the Germans.

It was in early mediaeval England that the essential characteristics of the manorial system first became clearly isolated. Intimately connected with the village community, the English manor revealed the influence of Germanic (Anglo-Saxon) rural organization. The manorial arrangement proved itself the most convenient device for organizing large estates such as crown and church lands or the possessions of the nobility. Very frequently the manor was held as a feudal estate by a thane (thegn), a knightly retainer of the king. Although English manors manifested a wide variation as to both size and method of administration, a composite sketch may be attempted. The lord's residence, fortified and surrounded by ditches, stood in the center of a village laid out according to plan and situated near a road or crossroads. The servants—or in the earlier period slaves—lived on the estate, while in the village were located the houses and farm buildings of the peasants and the other dependents who occupied a more humble legal and economic status in the prevailing hierarchy. The freemen (socmen or geneats) are thought to have been originally free, tax (*gafol*) paying peasants, who assumed a status of dependency by committing their personal protection to the lord and by surrendering to him the prerogatives of taxation and judicial administration. Below the socmen in the hierarchy were other peasants (geburs, villeins) more heavily burdened with obligations, especially with labor dues. The differences between these social groups gradually disappeared, the designation villagers (villeins) coming to be applied to all indiscriminately. Beneath the peasants there were also cotters (cotsetlas), who possessed nothing more than a house and a small piece of land.

The manor and the village had at their disposal a broad expanse of land—arable fields, meadows, pastures and forests—as well as springs, streams and lakes. The arable land was cultivated on the open field system; the individual holdings were unseparated and unfenced. The land of the lord (demesne), which usually contained between 300 and 400 acres, was made up as a rule of large block shaped tracts, although occasionally his parcels were scattered among those of the peasants. The cultivated land of the villagers was cut up into a number of sections (furlongs), which were in turn subdivided into strips. The individual peasant owned a number of narrow strips which were widely scattered over the whole area. The unit of measurement was an acre, made up of strips of a definite width, usually 4 rods. Originally the share of land seems to have consisted of 120 acres, or a hide, which was later reduced to a quarter of a hide. The hide, composed of strips 4 yards wide, was apparently calculated for tillage with eight draft animals, while the yardland (virgate), with its 1-yard strips, was designed for a double team of oxen; within a short time, however, forms of land tenure began to deviate in numerous ways from this norm. The arable land was cultivated on a three-field system: one part of the fields was assigned to summer crops, another to winter crops, while a third

part was left fallow. Since the separate strips were not immediately adjacent to the farmyards, it became necessary to introduce joint responsibility for work in the fields (joint labor). If at the outset this regime guaranteed a uniform distribution of labor by forcing the idle to share in the production, it tended to become in the course of time a barrier to economic progress. Pastures and forests were regarded as common (*gemaen*) lands and were under the control of the community. The former were used in common, while the use of the latter—as, for example, in the gathering of wood—might be left to the discrimination of individual villagers. Beekeeping and fishing also were originally communal enterprises. The lords, however, reserved special rights for themselves, such as hunting, and after the arrival of the Normans they acquired sovereign rights over all the lands. The peasants were obliged to render dues in kind and sometimes in money and to perform services. Labor services being indispensable to the upkeep of the manor became obligatory even on villagers who had originally been freemen. In addition to furnishing labor and teams for tilling and transportation and rendering various kinds of assistance on certain set days and weeks, the peasant found himself increasingly liable to emergency requisitions arising oftentimes from the whim of the lord as well as to special taxes in the event of a death or a marriage. There were also within the manor shepherds, fishermen, beemasters, blacksmiths, joiners and cloth makers. With the gradual disappearance of many of his privileges the lot of the peasant became an increasingly unenviable one.

Since the manor constituted a convenient administrative unit, it served well the purposes of the state. Apart from the payment of general taxes and the fulfilment of special obligations it was called upon for the *trinoda necessitas*, i.e. the building of roads and bridges, the proper maintenance of castles and military and naval contributions in money or men. Being charged in addition with the administration of justice (sake and soke), it set up courts which dealt with manorial affairs, in accordance with customary law (custumals), and dealt also with cases of public law.

The manorial system reached the peak of its development in England during the period of the Norman Conquest, revealing those characteristic forms which are preserved so clearly in the *Domesday Book*. Thereafter it gradually lost its economic and political significance. Although the beginnings of this system in Ireland and Wales may be traced to the tribal period, it did not take a clearly defined shape in these countries until their conquest by the English.

The development of the manorial system in France (*régime domanial*) was strikingly systematic, especially in the northeast and in the adjacent southern Netherlands. In Normandy and Bretagne, however, as well as in the south the development was less complete and displayed numerous deviations from a strictly logical norm. An excellent picture of the French system is presented in the vivid *Capitulare de villis* issued under Charlemagne. The organization of the villeinage was similar to that of the English manors. The power of the lord, however, was greater, as can be seen from the fact that the right of the villagers extended only to the usufruct of the forests and common pastures (*communia*). The estate was managed by a *maire*, who was assisted by *sergents* and *prévôts*. The manor (*court*, *manoir*) was surrounded by the premises of the peasants (*manse*, *meix*, *mès*). Some of the latter were free tenants (*villains francs*) who had to fulfil certain obligations in accordance with customary law (*coutume*), but most of them were serfs, who had to pay personal dues (*taille*, *mainmorte*, *formariage*, *chevage*) and to perform labor services for the manor, as in the fields and mills. For the reclamation of uncultivated lands outsiders, known as guests (*hôtes*), were engaged on somewhat better terms. The lords enjoyed legal immunity and exerted over their subjects an authority which applied to both persons and property. More important still they exercised a jurisdiction over adjacent areas extending beyond the original limits of the manor. In this way a system of territorial organization was evolved, composed of seigniories whose inhabitants not only were subject to the sovereign rule of the lords but also were burdened with dues and services. While in southern France peasants enjoyed great leeway, in the northeast there came to prevail the principle *nulle terre sans seigneur*.

Early mediaeval Italy likewise possessed a clearly defined manorial technique. The typical Italian manor was surrounded by holdings of free peasants (*manentes*, *massarii*), who enjoyed various rights, as well as by lands that were held on leases (*libelli*). The fact, however, that the Italian cities, which since the Roman period had been aggressive in the defense of their privileges, became the dynamic force in the economic and political life of mediaeval Italy caused the system of land tenure to assume more liberal forms

as regards the system of rent, free leasing and particularly free labor. Similar conditions obtained in early mediaeval Spain. At a later period, however, differences began to appear between northern Spain, which preserved its manorial institutions, and the southern provinces, which under the yoke of Moslem rule witnessed the virtual abolition of the manor.

In Germany the manorial system expressed itself in two forms, which differed as regards both their economic organization and administration and their relationship with the agrarian communities. As a rule the crown and church lands and the large secular possessions were scattered over wide areas, as were also the smaller estates. The manorial system (*Fronhofsverfassung*, *Villikation*) seems to have constituted during the early Middle Ages the most important form of agrarian organization. Surrounded by closely grouped peasant farms (*Mansi*, *Hufen*), the manor (*Salhof*), restricted oftentimes to a few *Hufen* of acreage, formed a center of economic activity which embraced the various branches of agriculture, forestry and manual trades. In the looser form of manorial organization, which existed, particularly in northwestern Germany, side by side with this more familiar type, small independent holdings were likewise frequent; but the role of the manor was essentially different, being little more than a center for collecting dues. In the more familiar type the manorial association (*Hofgenossenschaft*, *familia*) was divided into social groups: free tenants, full serfs and servants; but gradually these differences were replaced by a common legal system (*Hofrecht*), in which the members constituted an organic unity, although differences of possessions and obligations continued to be recognized. When the manor controlled several villages (*Dorfgemeinde*) or an entire rural district (*Dorfmark*), it frequently combined for administrative purposes with the village communities, a manorial official (*Meier*, *Schulze*) serving also as head of the village association (*Dorfgenossenschaft*). The lot of the peasants improved after land rents and labor services had become fixed. With the Hohenstaufens the manorial associations (*Fronhofsverbände*) began to reveal marked symptoms of deterioration, and in the west of Germany the feudal system as a whole began to manifest symptoms of petrifaction and decay.

In the region east of the Elbe, however, there began to appear shortly after the German recolonization a more intensified and rigorous adaptation of the manorial technique (*Gutsherrschaft*), which also manifested itself in the territories which had remained under Slavic rule. This marked recrudescence of the manor is attributable primarily to the increasingly common practise of endowing knightly warriors with colonial estates, which were operated by dependent peasants and cottagers. At first these estates served to supply local needs. Later, however, particularly with the close of the Middle Ages, the rise of cities not only in Germany but also in Holland and England created a tempting market for farm products, especially cereals and wool. Glimpsing the possibilities of large scale production, the lords of the manor purchased or if necessary seized the holdings of the peasants, thus creating large enclosed domains within which they improved agriculture, exerted jurisdiction and levied taxes. Such enterprises (*Gutsherrschaften*) may therefore be said to constitute a continuation of the *Herrengutssystem* of the earlier Middle Ages.

In the Scandinavian countries the agrarian system manifested the characteristics of a peasant culture, although manorial institutions with a system of land renting existed even here. They were less frequent in Norway than in Sweden and Denmark, where villages and land organization resembled the English system.

In the Slavic east agrarian property relationships assumed a distinct form relatively late after the region had come under the influence of the Byzantine and western civilizations. In Poland, where the masses of the agrarian population early found themselves in a state of dependence because of the so-called rights of the princes, the manorial system is known to have existed in the twelfth century and probably originated even earlier. The princes and the noblemen enfeoffed by them had exercised authority over manors. A characteristic institution was the so-called service settlements (*osady slouzhebne*), the name of which indicates the presence of persons serving in specialized capacities, such as clerks, hunters, fishermen and blacksmiths, and seems to suggest a more definite distribution of economic function. It is scarcely to be assumed that the east German colonization contributed immediately to the development of the manorial system (*Herrengutswirtschaft*) in Poland, inasmuch as the villages, settled in accordance with German law, were composed chiefly of peasants. But it is not unlikely that noble estates arose at a later period out of the holdings of the leaders of the colonization (*Lokatoren*, *Schulzen*) or that the lords deliberately acquired such estates as a

step toward the development of a manorial system. In any case the *Gutsherrschaft* was widespread in both Poland and Lithuania.

In the agrarian system of Russia, which developed under the influence of the Varangians and of the great cities Kiev and Novgorod, a sharp differentiation must be drawn between the white land, on which were located the great estates of the princes, boyars and monasteries, and the black land, held by the large masses of the free rural population. The lords possessed feudal estates (*kormlenie*) as well as widely extended possessions whose economy rested on the payment of dues (*obrok*) and the performance of labor services (*robot*). The situation of the serf (*kholop*) was miserable as compared with that of the obligated tenant (*zakup*). At a later date there are indications of a wide variety of social gradations among tenants. As a rule the manors in Russia were not connected with village settlements. A characteristic institution which began to make its appearance after the sixteenth century was the mir, or village community, with its peculiar system of landownership, according to which the distribution of land was dictated by the numerical size and needs of the family. According to some scholars the mir is an ancient institution, while others connect it with serfdom and derive its origin from the communal liability for taxes.

It is readily apparent that the manorial system and other related forms of land tenure fulfilled a highly useful function from both economic and technological points of view. The more systematic organization of labor and the greater rationalization in management led to an increase in the variety and quantity of production as well as to an improvement in the methods of farming. Not only were opportunities thereby created for greater demand and a more abundant local consumption, but it also became possible to sell agricultural products to the outside world and in this way to prepare the way for an economic development that extended beyond the limits of the village and the manor. In these benefits the peasants likewise shared despite the fact that at the same time they were heavily burdened with obligations which were augmented by exactions on the part of the state and the church. The economic importance of the mediaeval agrarian system declined with the rise of commerce and money economy and the emergence of cities. Manorial obligations began to lose their force; dues were simplified and fixed in the form of rent. The labor services, which in many cases had become unprofitable, were in the main abolished, being replaced by money payments with which labor was hired. Furthermore a system of free leasing—for a period of years or for life—became common; the heritable lease was likewise resorted to after the manner of the Roman emphyteusis. There ensued a rapid increase in the number of free small tenants, farm laborers and servants who sold their labor voluntarily. The social consciousness of the rural masses was awakened; the intellectual movement which began during the crusades gained in momentum. In the thirteenth and fourteenth centuries peasant revolts occurred sporadically in both France and England. Germany following local insurrections during the late Middle Ages experienced its great Peasants' War during 1524–25 without, however, undergoing a radical modification of its agrarian system. But a profound transformation of the prevailing system was brought about by general economic changes, which first made themselves deeply manifest in England. The owners of the great English estates responding to the growing demands of an expanding commerce entered upon a period of large scale enclosure, concentrating especially on the conversion of arable land into pasturage. Mediaeval conditions persisted much longer in France and western Germany, while in eastern Europe the manorial system showed remarkable capacity for adapting itself to the demands of agrarian capitalism. Under the aegis of mercantilistic and later of physiocratic doctrines the various European states with an eye to increasing population and state revenues attempted to foster the welfare of the peasants, especially in the matter of land tenure. It became increasingly apparent, however, that efforts at rural reform had little chance of success as long as the older agrarian system was allowed to continue. Effective reform even when undertaken on such a large scale as in England and Denmark seemed to call for the removal of the existing personal obligations of the peasants, the abolition of land dues, the division of communal lands, the elimination of joint labor by fusing the scattered parcels and the reorganization of rural communities. In France this was the work of the Revolution of 1789, in Germany of Stein and Hardenberg in 1807 and the Revolution of 1848, in Russia of Alexander II and his reforming ministers of 1861. Although these various reforms are the expression of a similar spirit, the process of carrying them into execution represents a variety of adjustments to the historically conditioned agrarian patterns of the

different countries, which continue to reflect even to the present the peculiarities of their historical evolution.

RUDOLF KÖTZSCHKE

See: FEUDALISM; SERFDOM; VILLAGE COMMUNITY; COLONATE; LAND TENURE; LANDED ESTATES; ENCLOSURES; AGRARIAN MOVEMENTS; AGRICULTURE.

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MANSFIELD, FIRST EARL OF; WILLIAM MURRAY (1705–93), English judge. Although of Scottish origin Mansfield secured recognition as the leading figure of the English bar before reaching the age of thirty-five. He was made solicitor general in 1742 and was for the next fourteen years one of the leading figures in parliamentary history. By birth a Jacobite, he was in politics a Tory who nevertheless held moderate views, and he was truly characterized by Macaulay as "the father of modern Toryism, of Toryism modified to suit an order of things in which the House of Commons is the most powerful body in the state." Becoming attorney general in 1754 he was the leader of the House of Commons for two years under the administration of the duke of Newcastle. In 1756 he was appointed chief justice of the King's Bench; he resigned from this office in 1788, passing the last five years of his life in retirement.

Mansfield's career both in politics and on the bench was colored by many dramatic incidents. His decision on some of the important constitutional questions that arose from the activity of John Wilkes brought him into popular disfavor, and he was bitterly attacked by Junius as showing marked leanings toward arbitrary power; he nevertheless pursued the course which he held to be right. His support of the Roman Catholic Relief Act of 1778, dictated by his tolerance, made him obnoxious to the opponents of that measure and in the celebrated anti-Catholic Gordon Riots of 1780 he not only barely escaped serious bodily injury but also suffered the destruction of his house by fire.

Mansfield's chief title to fame rests on his judicial career. As a judge in criminal cases he earned a reputation for fairness and impartiality but it was his work in commercial law which won him recognition as one of the greatest of English judges. Lord Holt, who fully appreciated the importance of molding the principles of the common law to meet the new conditions of commercial life, had already prepared the way for Lord Mansfield; but it was the latter with his remarkable knowledge of foreign legal systems who settled the principles of English commercial law on their modern bases. Indeed he practically remade the law relating to shipping, insurance and other commercial transactions; and by basing "quasi-contractual obligations" on the broad grounds of natural justice and *aequum et bonum* as opposed to the earlier theory of a fictitious contract, he contributed much to the placing of that branch of the law on its modern founda-

tions. It was in fact by him that rules which previously as part of mercantile custom had bound only those who had been proved to be merchants were woven into the common law of England.

Great as was Mansfield's achievement in finally incorporating the law merchant in the English common law system, it had one serious defect: in his desire so to mold the common law as to meet modern conditions he was led to usurp in important particulars the function of the Parliament. Like many other men of his time he held firmly to the idea that the eighteenth century was the most enlightened age in English history. Since the earlier precedents of English law came in his judgment from a barbarous age, he felt it necessary to disregard or remold some of them; and it was this same position again that caused him to seek to do away with the long standing historical separation between law and equity by giving full recognition to equitable as well as legal rights in the courts of common law. Influenced by the canonists' conception of *causa* and the Chancery notion of consideration, he introduced in common law cases the principle that moral obligation was a consideration which would support and make binding a contractual promise; and viewing consideration as purely evidentiary he held that a promise embodied in any writing, even though not under seal, was enforceable. But although these and indeed most of Mansfield's innovations were rejected by later judges as incompatible with the processes of legal development by judicial precedent, it is a striking testimony to his remarkable foresight as a legal reformer that some of his heretical doctrines were incorporated in the law at a later time by means of parliamentary acts. The Judicature Acts by fusing the courts of law and equity finally gave expression to his idea of recognizing equitable rights in a court of law. His work in reforming various parts of common law jurisdiction fails to equal his achievements in commercial cases only by virtue of the truly remarkable character of the latter.

H. D. HAZELTINE

Consult: Holliday, John, *The Life of William, Late Earl of Mansfield* (London 1797); Campbell, John, *The Lives of the Chief Justices*, 4 vols. (3rd ed. London 1874) vol. iii, ch. xxx, vol. iv, ch. xl; Postgate, R. W., *That Devil Wilkes* (New York 1929); Birkenhead, Earl of (F. E. Smith), *Fourteen English Judges* (London 1926) p. 168–96; Macdonnel, John, Introduction in Smith, J. W., *A Compendium of Mercantile Law* (13th ed. by H. C. Gutteridge and others, London 1931) p. ccvii–ccxxvi; Holdsworth, W. S., *A History of English Law*, 10 vols. (3rd ed. London 1922–32) vols. vi–ix; Winfield, P. H., *The Province of the Law of Tort* (Cambridge, Eng. 1931) ch. vii, discussing Mansfield's contribution to quasi-contract.

MANU, CODE OF. *See* LAW, section on HINDU LAW.

MANUAL TRAINING. For over three hundred years leading educators in various countries have considered and worked toward the methods of teaching and the content of instruction which are known today as manual training, or industrial arts education. Among the earliest of these educational pioneers was Comenius (1592–1670). The educational practise of his day and of many later years was characterized by instruction which was almost exclusively bookish, but Comenius contended that doing and thinking should be combined. During the next century Rousseau carried forward much of the same thought about the need for learning through actual participation instead of by merely talking about things. In turn Rousseau's teachings struck a responsive chord in Pestalozzi, who had a great influence upon educational theory and practise and particularly upon such of its forms as have been called manual training, and in Fröbel, whose belief in the educational value of handwork also attracted wide attention. The specific prototype of manual training, however, was a form of instruction through craftsmanship which was introduced by Uno Cygnaeus into the elementary rural schools of Finland in 1866 and which subsequently had a great influence in Sweden.

In Sweden the sloyd system of handwork originated as an economic movement to protect domestic industry against factory competition, but it was soon adapted to educational purposes. In 1875 a sloyd training school for teachers was founded at Nääs by August Abrahamson and was conducted with marked success by his nephew Otto Salomon. The school soon had an international reputation and its influence extended to all parts of the world. Sloyd in Scandinavian countries involved the use of paper, cardboard, straw, willow, wood and iron. The courses of instruction were based upon a progressively arranged series of projects selected with due regard to prevailing home industries and everyday family needs. The objectives set forth by Salomon included the development of respect and love for work; of habits which make for order, exactness, cleanliness and neatness; and of independence and self-reliance. He advo-

cated work on useful, complete articles or projects and not merely on parts of articles or exercises; his instruction was based on educational principles; he showed that trained teachers gave better results than craftsmen without a professional background; and he coordinated the teaching of mechanical drawing and shop practise, as is done in progressive schools today. Despite its many desirable features sloyd never gained general recognition in the United States, probably partly because of the differences in interests, needs and modes of living which obtained there as compared with Sweden; but it did have a manifest influence on the later development of manual training in the United States.

About the same time that sloyd was being placed on an educational basis in Sweden, Victor Della-Vos at the Imperial Technical School in Moscow was experimenting with methods of teaching shop work. In 1868 he conceived the idea that workshop operations could be reduced to a series of logically arranged exercises. This system would facilitate teaching, would be more economical of material than the former apprenticeship system and would, he thought, contain the chief elements of the craftsmanship training which is required for all trades. An exhibit of these exercises, made in wood and metal, was shown at the Centennial Exposition in Philadelphia in 1876, where it attracted wide attention. Calvin M. Woodward, who was dean of the Polytechnic School of Washington University in St. Louis, John D. Runkle, who was president of the Massachusetts Institute of Technology, and other educators were highly impressed with the Russian system and became the pioneers of manual training in the United States. Industrial drawing had been introduced into the public elementary schools of Massachusetts in 1870. During the same year the University of Illinois independently of Salomon and Della-Vos had opened wood and ironworking shops in connection with courses in architecture and mechanical engineering. Stevens Institute in Hoboken, New Jersey, had equipped a series of shops and Washington University had started a shop for engineering students in 1872. Between the years 1883 and 1898 over one hundred manual training centers were established in the public schools of the United States.

Manual training in the United States was influenced by both the models of sloyd and the exercises of the Russian system. The country was in a stage of rapid industrial development and the consequent inventions, discoveries and technological changes were making it necessary even as in the present day for workers to readjust themselves vocationally. Many educators of the late 1880's and the 1890's thought that the general exercises of the Russian system would go far toward solving their problems. On the one hand, there were men like Runkle and Woodward who believed that manual training should be regarded as a part of general education; on the other hand, there were many who thought that manual training would help to supply the existing shortage of skilled craftsmen. Some favored it as a means of vitalizing the rest of the curriculum, whereas others looked upon manual training as deserving coordinate rank with other aspects of general education. In those pioneer days the teachers were either skilled craftsmen selected from the trade or men with engineering training. In neither case were they trained professionally.

During the last forty years and more particularly during the last two decades, rapid changes have taken place in the field of manual training. The very term is now almost obsolete in some sections of the United States and other terms are substituted, such as manual arts, mechanic arts, practical arts and industrial arts, which have somewhat synonymous although not identical meanings. The term practical arts is broad and inclusive, covering industrial, agricultural, home making and commercial arts education, much as vocational education includes trade or occupational training in these four major fields. Industrial arts, which is probably the most desirable term, stands for a modernized, broadened, enriched, professionalized and socialized manual training. It is as different in theory and practise from the old style manual training as are modern junior high school theory and practise from the traditional system of twenty years ago. Manual training emphasized what the word implies—manual work and habit formation controlled by a disciplinary conception of education —whereas industrial arts stresses mental and social development and the learning content involved. Manual training called for teacher developed assignments, whereas industrial arts calls for purpose, plan, execution and judgment on the part of the pupils under the guidance of the teacher. Industrial arts is distinctly a part of general as distinguished from vocational education. Neither manual training nor industrial arts has ever functioned effectively as trade education.

Industrial arts education should be thought

of as a phase of general education starting from the first grade and continuing through the high school. The specific objective of elementary industrial arts is to introduce the child to the major fields of industrial arts activities, which center around such problems as food, clothing, shelter, utensils and tools and machines. In the junior high school exploratory and guidance values are among the most important. Most progressive school districts require industrial arts in the junior and make it elective in the senior high school.

Among the teacher training institutions which have molded public opinion and have strongly influenced the quality and content of industrial arts education Teachers College of Columbia University deserves a foremost place. Under the leadership of James E. Russell and of his son William F. Russell and through the philosophy and instruction of the late Frederick G. Bonser, Teachers College has profoundly affected industrial arts educational practise in many countries.

Manual training, or industrial arts instruction, in other countries reflects the progress that has been made since the beginning of the twentieth century in educational theory. In France industrial arts education is given in close correlation with drawing, mathematics and other school subjects. France feels that cultural education is very important and teaches industrial arts from that standpoint. In Germany post-war educational reforms are stressing the full development of individual powers as distinguished from the overemphasis of unapplied knowledge. The *Jugendbewegung*, or youth movement, illustrates this point. German industrial arts education is sponsored in large part by private organizations; it is generally recognized as an important element in developing artistic appreciation and furthering creative art and superior craftsmanship. England has likewise learned that instruction in the industrial arts is essential to a well balanced program of general education and is giving increased attention to it, feeling that mass production is not wanted in its schools and that education—including industrial arts education—should always remain in the realm of the teachers who are artists and craftsmen.

F. THEODORE STRUCK

See: EDUCATION; INDUSTRIAL EDUCATION; VOCATIONAL EDUCATION; PRESCHOOL EDUCATION; VOCATIONAL GUIDANCE; HOME ECONOMICS; HANDICRAFT.

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MANUILOV, ALEXANDR APOLLONOVICH (1861–1929), Russian economist and educator. Manuilov was professor of economics at the University of Moscow. When the Russian universities were granted the right of self-government in 1905 he was elected pro-rector and later rector of the university. His devotion to the cause of freedom of higher education and his opposition to the reactionary policy of the czarist regime toward the student body won him the recognition of the educated classes in Russia. In 1911 Manuilov resigned from his post in protest against the recurring interferences of the government in matters of academic freedom. After his resignation, which was followed by a wholesale exodus of the faculty, he occupied the chair of economics at the Moscow Institute of Commerce and was editor of the section on economics in the new Brockhaus-Efron encyclopaedia. As a frequent contributor to and for a time editor in chief of *Russkiya vedomosti*, the foremost academic liberal publication in prerevolutionary Russia, he was guided in his policies by broad democratic principles rather than by adherence to any single party program; his fair treatment of the labor movement earned him the esteem of labor leaders.

Manuilov's scientific interests were in the field of land tenure, agrarian reform and monetary theory. His *Arenda zemli v Irlandii* (Land tenancy in Ireland, Moscow 1895), in which he analyzed the Land Law Act of 1881 and the Land Purchase Acts in Ireland, is still considered the standard work on the subject; it exerted considerable influence on the pre-war Russian agrarian policy of breaking up communal holdings and encouraging small peasant proprietorship. In his monetary theory Manuilov shared to a large extent the views of Zimmel, Wagner and Helfferich. Although he was much attracted by G. F. Knapp's theory he did not accept Knapp's conception of money as a mere medium of circulation but held that the function of money is to serve as a measure of value as well. His course of lectures on money was published in Moscow in 1918 as *Uchenie o den'gakh*; the section which deals with the currency problems in Russia can

by no means be ignored by any student of Russian economics.

S. P. TURIN

Other important works: "Zametki ob obshchinnam zemlevladenii" (Notes on communal ownership) in *Ocherki po krest'yanskomu voprosu* (Essays on the peasant problem), ed. by A. A. Manuilov, 2 vols. (Moscow 1904–05) vol. i, p. 256–85.

MANUMISSION. *See* SLAVERY.

MANZONI, ALESSANDRO (1785–1873), Italian poet, novelist and patriot. In his youth Manzoni, a grandson of Cesare Beccaria, came under the influence of Vincenzo Cuoco and Francesco Lomonaco, both of whom had been exiled from Naples after the fall of the Parthenopean Republic and had taken refuge in Milan. All the subsequent political activity and ideas of the great writer were in accord with the conception of Italian unity and independence held and agitated for by these two thinkers. After the conclusion of the period of Napoleonic domination in 1814 he voiced these sentiments in a number of poems which reverberated throughout Italy. His *Liberi non sarem se non siamo uni*, the first lyric of the Risorgimento, was written in 1815 in support of the proposal made by Joachim Murat, king of Naples, that the Italians unite in a single powerful kingdom under Joachim's rule. Manzoni's most ardent patriotic poem was *Marzo 1821*. Evoked by the revolution of the Piedmontese Carbonari in 1821 and dedicated to the German poet-patriot Theodor Körner, this ode prophesied the erasure of all boundaries between the Italian states and the expulsion of the foreigners, who had failed to fulfil their pledges of liberating Italy. Although most of his life was passed in retirement Manzoni emerged on various occasions to take an active part in the struggle for independence and unification and in 1859 he could justly declare that he and Mazzini were among the oldest agitators for the cause. In the posthumously published *La rivoluzione francese del 1789 e la rivoluzione italiana del 1859* he presented a criticism on ethical and legal grounds of the former and a complete justification of the latter.

In addition to the direct influence of his patriotic writings and activities the tremendous popularity enjoyed by some of his more beautiful poems and especially by his immortal romance, *I promessi sposi* (3 vols., Milan 1825–27), made him an important factor in the creation of a moral and intellectual unity among Italians. *I promessi sposi* is one of the few works which, like the *Divine Comedy* and the tragedies of Shakespeare, have left an indelible mark on the spirit of a people. Manzoni, who had reacted from the rationalistic influences of his early years and embraced a Catholicism verging on Jansenism, was preoccupied with the moral regeneration of mankind, with the problem of human responsibility for events. As the advocate of human dignity he compares with Dante in the history of Italian culture. *I promessi sposi* has also considerable importance from the historical point of view; the social, economic, political, legal and administrative conditions of seventeenth century Lombardy are portrayed with the intimate knowledge of a researcher and of a man of broad and versatile cultural outlook.

GAETANO MOSCA

Works: *Tutte le opere di Alessandro Manzoni*, ed. by G. Lesca (Florence 1923). His correspondence has been collected in *Carteggio*, ed. by G. Sforza and G. Gallavresi, 2 vols. (Milan 1912–21). A good edition of *I promessi sposi* is that by E. Pistelli (Florence 1930), and a translation appears in the Bohn Library (London 1876).

Consult: Galletti, A., *Alessandro Manzoni, il pensatore e il poeta*, 2 vols. (Milan 1927); Sanctis, F. de, *Manzoni*, ed. by G. Gentile (Bari 1922); Gentile, G., *Dante e Manzoni* (Florence 1923); Ruffini, F., *La vita religiosa di Alessandro Manzoni*, 2 vols. (Bari 1931); Croce, B., *Storia della storiografia italiana*, 2 vols. (2nd ed. Bari 1930); Visconti, A., "Il pensiero storico-giuridico di Alessandro Manzoni nelle sue opere" in *Archivio storico Lombardo*, 5th ser., vol. xlvi (1919) 382–440; Bulle, O., *Die italienische Einheitsidee in ihrer literarischen Entwicklung von Parini bis Manzoni* (Berlin 1893) p. 205–345.

MAQRIZI TAQI AL-DIN AḤMAD, AL- (1364–1442), Arab historian. Al-Maqrīzi was born at Cairo and educated in the law by his grandfather, a Hanafite; later he went over to the Shafiites and became a vigorous adversary of the school he had originally supported. After serving as judge and teacher of tradition in Cairo he went in 1408 to Damascus as administrator of the *Wuqūf* and about ten years later returned to Cairo to devote himself entirely to writing. His best known work, *Khiṭaṭ* (*al-Mawā'iẓ wa al-I'tibār bi Dhikr al-Khiṭaṭ wa al-Athār*, ed. by Gaston Wiet, vols. i–v, Cairo 1911–27; tr. by U. Bouriant and P. Casanova, vols. i–vi, Cairo 1893–1920), representing for the most part a skilful and scholarly compilation of previous histories, deals with the local history and topography of Egypt. It is not only an invaluable source for history and custom but also contains many penetrating and accurate reflections on

philosophy and political economy. Here al-Maqrīzi discusses customs duties, rights pertaining to dams and their recent modifications, the apportionment and collection of taxes as well as the system of landholding and the situation of the tenantry. He condemns the system of military fiefs by which the Turks benefit and deplores the formation of a class of "pure fellahs," agricultural workers attached to the soil who live under conditions of actual slavery. As supplements to the *Khiṭaṭ*, al-Maqrīzi wrote a history of the Fatimites, *Itti 'āẓ al-Ḥunafa bi-Akhbār al-A' imma wa al-Khulafa* (Tübingen 1908), and of the Aujubids and Mamelukes, *Al-Sulūk li-Ma 'rifat Duwal al-Mulūk* (tr. by E. M. Quatremère as *Histoire des sultans mamlouks*, 2 vols., Paris 1837–44). Among his lesser writings, his *Nubdhat al-'Uqūd fi Umūr al-Nuqūd* (ed. by O. G. Tychsen, Rostock 1797; tr. by S. de Sacy, rev. ed. Paris 1797), a treatise on Moslem coins, deserves special mention. Of his projected eighty-volume work on the lives of all the rulers and outstanding figures of Egypt, al-Maqrīzi completed sixteen volumes, four of which are extant in manuscript form.

B. Carra de Vaux

Consult: Carra de Vaux, Bernard, *Les penseurs d'Islam*, 5 vols. (Paris 1921–26) vol. i, p. 147–57; Goldziher, Ignacz, *Die Zâhiriten, ihr Lehrsystem und ihre Geschichte* (Leipsic 1884) p. 196–202.

MARAT, JEAN-PAUL (1743–93), journalist and politician of the French Revolution. Marat, a Swiss by birth, studied medicine in France and in 1765 went to live in England, where he wrote tracts on medicine, human nature and parliamentary reform. Returning to France in 1777 as physician to the bodyguard of the count of Artois he turned physicist and attempted to disprove Newton's theories without eliciting what he considered proper recognition from the academies. At the outbreak of the revolution he was steeped in eighteenth century political literature, particularly the writings of Montesquieu and Rousseau; but his composite outlook was on the whole far from radical. His early revolutionary pamphlets, similar in tendency and emphasis to his political writings of the old regime, display a general adherence to limited monarchy and an incidental social concern with the ills of the lower classes and the evils of excess wealth. His rapid evolution into an advocate of the people against the powers in control was no doubt largely occasioned by his progressive disillusionment in the good faith of the latter. In September, 1789, as a self-appointed monitor of the people he founded the journal *Ami du peuple*. From its inception this journal took its stand on the extreme left, justifying or even helping to instigate every popular demonstration. Upon the king's flight Marat advocated a dictatorship, probably intending himself as dictator. When the monarchical constitution of 1791 was accepted, he reluctantly resigned himself to it in the hope that its defects might be remedied by the radicals of the new legislature. But he soon perceived that their policy made war with Austria inevitable and he resorted again to a plea for a dictatorship. As the war proved increasingly disastrous, Marat began to propose terror as a means of defending the revolution. The popular victory of August 10, 1792, made him a power in Paris. Having been named to the municipal Committee of Surveillance, he became involved in, although not directly responsible for, the prison massacres of September. None whom his journal opposed was chosen to represent Paris in the Convention, to which Marat was himself elected. There and in his *Journal de la République française* he vigorously advocated the execution of Louis XVI. Meanwhile the conservative Girondins attacked the Jacobin group through Marat, since his frank expression of extreme opinions made it easy to marshal the center against him. In April, 1793, they secured a decree sending him before the Revolutionary Tribunal, but the trial, unskilfully managed by the Girondins, resulted not only in his acquittal but also in a popular triumph. Thereafter he commanded the attack upon the Girondins which led finally to the insurrection of June 2 and the arrest of their leaders. Marat's health was now broken by the long periods of hiding and hardship he had endured since 1789, and it was a dying man whom Charlotte Corday assassinated.

As one of the outstanding journalists of the revolution Marat's audience consisted chiefly of the laboring proletariat and the poor of the city. His influence in the Convention and at the Jacobin Club from August 10, 1792, on had its source in his hold over these classes, which was in its turn derived far less from his constructive ideas than from his inflaming power of destructive invective. In his positive program Marat was not a democrat: he always advocated the rule of the few whether through a club, tribunal, dictator or committee. But his constant vigilance for traitors against the interests of the people, his apparent incarnation of the *ami du peuple*,

his perfervid condemnation of social injustice, which, however, stopped short of unreserved equalitarianism, made him an important factor in the arousing of class consciousness in the proletariat. At each successive stage of the revolution Marat was molded by events which others created; but if radicalism was thrust upon him, he became its leading spirit. The dead Marat cast an even heightened spell as a popular martyr and the symbol of lower class revolution, centralization and terror. His remains were interred in the Panthéon in September, 1794, only to be disinterred with the anti-Jacobin demonstrations of February, 1795.

LOUIS GOTTSCHALK

Important works: *Oeuvres*, ed. by A. Vermorel (Paris 1869); *Autobiographie de Marat. Les chaines de l'esclavage . . .*, ed. by Charles Simond (Paris 1909); *Les pamphlets de Marat*, with an introduction by Charles Vellay (Paris 1911).

Consult: Chevremont, François, *Marat: Index du bibliophile et de l'amateur de peintures, gravures, etc.* (Paris 1876); Gottschalk, Louis, *Jean Paul Marat; a Study in Radicalism* (New York 1927), with full bibliography; Jaurès, J. L., *Histoire socialiste de la Révolution*, ed. by A. Mathiez, 8 vols. (new ed. Paris 1922–24); Bougeart, Alfred, *Marat, l'ami du peuple*, 2 vols. (Paris 1865); Chevremont, François, *Jean Paul Marat, orné de son portrait: esprit politique, accompagné de sa vie scientifique, politique et privée*, 2 vols. (Paris 1880); Cunow, Heinrich, *Die revolutionäre Zeitungsliteratur Frankreichs während der Jahre 1789–94* (Berlin 1908).

MARCEL, ÉTIENNE (died 1358), French political leader. After the capture of John II by the English at Poitiers in 1356 Marcel, a wealthy cloth merchant who had become provost of the merchants of Paris in 1355, assumed the direction of the Estates General of northern France, which had been convoked by the financially embarrassed regent, the dauphin Charles. In his attempt to force Charles and his government to recognize the authority of the Estates the popular leader was supported by Robert Le Coq, the eloquent bishop of Laon, and by Charles the Bad, king of Navarre. At the same time as organizer of the city's defense he had at his command the military strength and resources of the local militia. Provoked by the vigorous opposition of the dauphin-regent and by his manipulation of the currency, Marcel released the revolutionary passions of the Parisian burghers and caused the marshals of Champagne and Normandy to be publicly massacred; nor did he hesitate to give encouragement to the uprising against the feudal nobility of the lower orders in Beauvaisis—a rebellion which under the name of the Jacquerie spread to other provinces of France. When the nobles turned upon the peasants in a thoroughgoing attempt at suppression, Marcel apparently, as is indicated by his letters to the Flemish cities, considered the creation of an extensive federation of communes. The Parisian bourgeoisie, however, was frightened by the excesses of the Jacques; and as the dauphin was laying siege to Paris, the provost appealed to Charles of Navarre, appointed him captain of the city and arranged for the entry of troops. But the fact that there were a number of English soldiers among the troops of Navarre provided Marcel's enemies with the opportunity of accusing him of treason. He was killed before one of the city gates on July 31, 1358. Because of the firmness of Charles as dauphin and as king Marcel's dream of a quasi-democratic regime perished with him, although some of the provisions of the reform ordinance which the provost had imposed upon the Estates in 1357, especially that concerning financial organization, were preserved. In the second half of the nineteenth century Marcel was extolled as an ancestor of municipal franchise and public liberties in France.

HENRI HAUSER

Consult: Perrens, F. T., *Étienne Marcel et le gouvernement de la bourgeoisie au quatorzième siècle (1550–1558)* (Paris 1860), and *Étienne Marcel prévôt des marchands, 1354–1358* (Paris 1874); Delachenal, Roland, *Histoire de Charles V*, 5 vols. (Paris 1909–31), especially vols. i–ii; Meyer, Edmond, *Charles II, roi de Navarre, comte d'Évreux* (Paris 1898); Le Febvre, Yves, *Étienne Marcel* (Paris 1926).

MARCET, JANE (1769–1858), English popular writer. Jane Marcet composed treatises, mostly in the form of dialogues, on a large variety of scientific and educational subjects, including physics and chemistry, botany and zoology, grammar, history and politics. Her most important works were on economic subjects. *Conversations in Political Economy* (London 1816, 7th ed. 1839), although it did not profess to contain anything original, is nevertheless interesting as a simple and non-controversial account of the main economic doctrines current in the period immediately preceding the publication of Ricardo's *Principles*. It was very widely read and received warm praise from J. B. Say, McCulloch and Lord Macaulay; and Harriet Martineau was inspired by reading it to undertake her still more influential work in the same field. Of less significance are *John Hopkins' Notions on Political Economy* (London 1833) and *Rich and*

Poor (London 1851), both of which were addressed primarily to the working classes, the latter in particular being intended "to show poor children that the rich are their friends and not their foes."

LINDLEY M. FRASER

MARCUS AURELIUS. *See* AURELIUS ANTONINUS, MARCUS.

MARGINAL UTILITY. *See* VALUE; ECONOMICS, section on MARGINAL UTILITY ECONOMICS.

MARIA THERESA (1717–80), empress of Austria. Although her father, Charles VI, had prepared for her accession by the Pragmatic Sanction of 1713 and by international treaties guaranteeing the sanction, Maria Theresa's enthronement upon the extinction of the male Hapsburg line in 1740 was the beginning of bitter wars involving almost all of Europe as well as America. On the advice of her chancellor of state Kaunitz she broke with the anti-Bourbon tradition after the War of the Austrian Succession (1740–48) and fought the Seven Years' War (1756–63) in alliance with France rather than England. She was unable either to regain the province of Silesia snatched by Frederick the Great in 1740 or fully to compensate for its loss by the acquisition of Galicia through the partition of Poland in 1772. During her reign her rival and contemporary Frederick the Great developed Prussia into a great power with ever more formidable pretensions to the sovereignty of the German states within the Holy Roman Empire. But the net result of her military activities against a superior enemy was to preserve the house of Hapsburg, the modern dynastic line of which she founded, for a new ascendancy as the ruler of its hereditary dominions. After 1745 neither friend nor foe denied Maria Theresa the title of empress and she was able to carry out her great internal reforms.

Motivated at the beginning of her reign by the military necessity of strengthening her army and finances and later by the ambition to counterbalance the loss of the rich industrial province of Silesia, Maria Theresa adopted a policy aimed at the increase of the royal power and at governmental centralization. Her program, involving political, administrative, fiscal, economic and social elements, was in harmony with the tendency then prevalent on the continent toward the building up of the absolute state and with the cameralistic theories and ideas associated with this tendency. Without resorting to violence the crown deprived the estates—provinces and church—of their traditional autonomy and incorporated both aristocracy and clergy into the service of the state. Those whom Maria Theresa chose as advisers were men oriented in the absolutistic ideas and sympathetic with her imperious will to power. Her principal counselors in internal policy were Bartenstein, Haugwitz and Kaunitz (who was also foreign minister); the most important scientists and publicists in her service, Martini and Sonnenfels. The system of justice and administration was completely reorganized: whereas formerly the two branches had been combined and ineffective, separate supreme institutions were now established for each function and placed at the head of highly centralized systems which nullified the previous position of the feudal lords as intermediaries between government and subjects. The army was remodeled after the Prussian example; the financial system by which it was maintained surpassed in modernity that created by Frederick the Great. To cope with the situation produced by its increasing demands upon the taxpaying capacity of the population the state undertook the advancement and regulation of economic activity on mercantilistic lines. New industries were propagated, such as textiles in what is modern Czechoslovakia and porcelain in Vienna. In the latter part of her reign, when Maria Theresa felt the influence of physiocracy, she supplemented her interest in industry and commerce by measures for the social and economic welfare of the farmers. For the first time wide tracts of land in the southeastern portion of the Hapsburg dominions were opened for settlement—a proceeding whose consequences may be traced in the modern problem of German minorities in that region. As the patron of education and culture Maria Theresa founded the Austrian elementary school as well as a system of higher instruction devised partly under rationalistic inspiration, partly for the furtherance of Catholicism and Germanization.

One of the greatest of the Hapsburgs, Maria Theresa was the founder of the modern Austrian state. She had to limit her internal policy largely to Austria and Bohemia, thus paving the way for the nineteenth century dual monarchy. There had been some foreshadowing of her reforms by her immediate predecessors and many of her more radical innovations were modified during her reign. But much of her social and cultural

work was of permanent significance and has survived the collapse of the power of her house.

REINHOLD LORENZ

Consult: Arneth, Alfred von, *Geschichte Maria Theresias*, 10 vols. (Vienna 1863–79); Guglia, Eugen, *Maria Theresia*, 2 vols. (Munich 1917); Kretschmayr, H., *Maria Theresia* (Gotha 1925); Uhlirz, K., "Die Reformen Maria Theresias und Joseph II." in *Handbuch der Geschichte Österreichs*, vol. ii, pt. i (Graz 1930) sect. 21; Dorschel, G., *Maria Theresias Staats- und Lebensanschauung*, Geschichtliche Untersuchungen, vol. v, pt. iii (Gotha 1908); Bright, J. F., *Maria Theresa* (London 1897); Lorenz, R., "Die Regierung Maria Theresias in der gesamtdeutschen Geschichte" in Gesamtverein der deutschen Geschichts- und Altertumsvereine, *Korrespondenzblatt*, vol. lxxviii (1930) cols. 179–90.

MARIANA, JUAN DE (1536–1623), Spanish theologian, historian, political theorist and economist. Mariana became a Jesuit at the age of seventeen and after holding professorships in Rome and Paris retired in 1574 to Toledo, where the greater part of his numerous and varied writings were produced. While the *De rege et regis institutione* and the *Historiae de rebus Hispaniae* may be taken to represent the two extremes of his intellectual activity, in some respects these works are mutually complementary. The thesis presented in the former that the only possibility of preventing the royal power from transcending the dictates of natural reason and law was through the union of the nation with the papacy becomes explicable in terms of the situation in Spain with its absolute Hapsburgs and feeble Cortes. In so far as Mariana's doctrine recognizes the primacy of the nation it is democratic in its aim, but its whole orientation is scholastic: the democratic mechanism of majority rule he rejects as a method of counting but not of weighing votes. The doctrine culminates in the principle of tyrannicide—a principle which found numerous adherents all over Europe and which, although it had been stated centuries before, made Mariana's name a household word. To regard it as a justification of assassination in general is to misinterpret it. Mariana, one of the outstanding representatives of Jesuit political theory, merely says that when an absolute ruler degenerates into a tyrant by acting contrary to the public will and weal and by forcefully suppressing the liberties of the nation, tyrannicide is the only method of effecting the essential purpose of revolution; that is, the overthrow of the state. As for the institution of monarchy he condones it as the least evil form of government, although he considers government itself to be only a historical and not an inherent necessity. This view, along with his eulogy of communal primitive life, which has caused him to be regarded as a precursor of Rousseau, and his justification of the appeal to law in the absence of royal equity, is typical of the theologians of his time. The determining principle of Mariana's social doctrines would in modern terminology be called the social welfare or, more precisely, humanitarianism. Because the church had come to look upon its wealth as private property rather than as a trust held for the benefit of the general public, he demanded that it be reduced. He censured the theater and bullfights for their effects upon morals. He insisted upon the obligation of the state to care for the poor and to promote the economic life of the nation, particularly agriculture. As elaborated especially in the treatise *De monetae mutatione* his stern and courageous strictures on debasement of the coinage, for which he was subjected to lengthy criminal proceedings, testify to his economic perspicacity and are noteworthy in that they lay stress on the increase in prices resulting from currency depreciation. He also discusses problems of public finance, advocating the abolition of tax farming and the instalment of systems of accounting and budgeting; his views with regard to the general sales tax clearly adumbrate the idea of graduated taxation. Mariana's outstanding contribution is the *Historiae de rebus Hispaniae*. His sources include along with documentary evidence much that is legendary or pure fable; but within a framework provided by the Catholic idea of divine guidance he somehow managed to weave this material into a unified history, which is not only methodical and erudite but a literary masterpiece.

RECAREDO FERNÁNDEZ DE VELASCO

Works: *De rege et regis institutione* (Toledo 1598?, new ed. Frankfort 1640; tr. into Spanish, new ed. Barcelona 1880); *Manual para la administración de Sacramentos* (Toledo 1581); *De ponderibus et mensuris* (Toledo 1599); *Historiae de rebus Hispaniae* (Toledo 1592; new ed. with additions by J. Miñana, The Hague 1733; tr. into Spanish by author, 2 vols., Toledo 1601; tr. into English by John Stevens, London 1699); *De monetae mutatione* in his *Tractatus VII* (Cologne 1609). The *Historiae . . .* and *De monetae mutatione* appear in Mariana's *Obras*, Biblioteca de Autores Españoles, vols. xxx–xxxi, 2 vols. (Madrid 1854).

Consult: Gonzalez de la Calle, P. U., "Ideas político-morales del P. Juan de Mariana" in *Revista de archivos, bibliotecas y museos*, 3rd ser., vol. xxix (1913) 388–406, vol. xxx (1914) 46–60, 201–28, vol. xxxi (1914) 242–62, and vol. xxxii (1915) 400–19; Paula Garzón, Francisco de, *El P. Juan de Mariana y las escuelas liberales* (Madrid 1889); Fernández de Ve-

lasco, R., "Apuntes para un estudio sobre el tiranicidio y el P. Juan de Mariana" in *Referencias . . . para la historia de la literatura política en España* (Madrid 1925); Antoniades, B., "Die Staatslehre des Mariana" in *Archiv fur Geschichte der Philosophie*, vol. xxi (1908) 166–95, 299–332; Cirot, Georges, *Études sur l'historiographie espagnole. Mariana, historien*, Bibliothèque de la Fondation Thiers, vol. viii (Bordeaux 1905); Laures, J., *The Political Economy of Juan de Mariana* (New York 1928); Allen, J. W., *A History of Political Thought in the Sixteenth Century* (London 1928) p. 360–66; Figgis, J. Neville, "On Some Political Theories of the Early Jesuits" in Royal Historical Society, *Transactions*, n.s., vol. xi (1897) 89–112.

MARIÁTEGUI, JOSÉ CARLOS (1891–1930), Peruvian sociologist and publicist. As a youthful poet and editor of *Razón* Mariátegui attracted the interest of President Leguia, dictator of Peru, who suppressed the magazine in 1920 and sent him to Europe, providing him with funds in the hope of winning him as an ally. In Europe he traveled, studied and wrote a series of essays on post-war politics: the crisis of democracy, Fascism as a capitalistic reaction, the appearance of Russian Communism, the awakening of the Orient. Returning home in 1923 he took up the struggle against Leguia and founded the revolutionary review *Amauta* (1926–30). His thinking, extremely advanced for Hispano-America, became a powerful influence among the younger generation; to it may be ascribed in part the *aprista* movement. His *Siete ensayos*, an interpretation of Peruvian affairs from a quasi-Marxian point of view, epitomizes his ideas somewhat sketchily and unsystematically. Mariátegui believed the Peruvian to be by nature unusually receptive to the world wide repercussions of the Russian Revolution, whose thought he tried to adapt to native conditions. His aim was to graft modern socialistic action upon indigenous tradition. He called himself a communist but was not a member of the Communist party. He regarded the purely political questions discussed since the attainment of independence as of interest solely to the semifeudal and bourgeois classes; the real Peruvian problem he saw as one of the Indian, the land and the class struggle. The Inca collectivist economy had been destroyed by the Spanish conquerors, who on the remnants of the *ayllu* (the Inca agrarian community), which encouraged labor and made it agreeable, erected a feudal economy. Depending at first almost exclusively on mining, this developed into a bourgeois economy based on guano and saltpeter and later on sugar and cotton. With the gradual absorption of the *ayllu* into landed estates the Indian fell into serfdom. The large landowners, lacking a creative industrial spirit, subordinated production to the fluctuating interests of foreign merchants. Capitalist evolution lagged and the absence of a vigorous capitalist class prevented the Indian from becoming a free wage earner and as such emancipating himself by organization. The Indian problem is not one of ethnic inferiority; it is not primarily moral or educational; it is economic and essentially a land problem. The liquidation of great estates is essential; the goal is not the creation of small estates but the nationalization of sources of wealth. Socialism is for Peru a historical necessity. There must be a return to the primitive community with a new spirit based on the new technique.

Mariátegui's intrepid will was daunted by neither disease nor poverty, persecutions nor imprisonment. He left behind an unfinished defense of Marxism, part of which appeared in *Amauta*.

ROBERTO F. GIUSTI

Important works: *La escena contemporánea* (Lima 1925); *Siete ensayos de la realidad peruana* (Lima 1928).

Consult: Frank, Waldo, "A Communication" in *New Republic*, vol. lxiii (1930) 181–82; Belaúnde, Victor A., "En torno al último libro de Mariátegui" in *Mercurio peruano*, vol. xviii (1929) 205–29, and vol. xix (1929) 333–45, 565–83; Ulloa, Alberto, in *Nueva revista peruana*, vol. ii (1930) 261–79.

MARINE INSURANCE. The purpose of marine insurance is to provide for ships and cargo protection against loss from the perils of the sea. Its rules and policies differ in many important respects from other forms of insurance. Marine insurance companies frequently write also fire insurance and insurance against the risks of inland transportation, including automobile and aircraft insurance. Although the amount of ocean marine insurance in force is small in comparison with the totals of some other forms, it plays an extremely important economic role in its relation to oversea transportation.

Marine insurance was the earliest form of insurance. Coincident with the development of commercial intercourse by water routes there arose the need of protection against loss by the sea or by pirates. The type of indemnity first used was cooperative, in the form of what is now called general average. Under this form sacrifices by jettison in order to save the ship and its cargo were shared ratably by all interests

concerned in the adventure. General average was recognized as a maritime custom in Rhodes, as is evidenced by the marine code issued in 916 B.C. Contribution for loss by jettison only could not long meet the requirements of commerce and there was devised a system, prominent in ancient Greece, by which a loan was made by bankers against the pledge of the ship or of the cargo, repayable only in the event of the safe arrival of the pledged property. The loan carried interest at a high rate, equivalent to the bank rate for the use of the money plus a charge (faenus nauticum), similar to the present premium charge, for the risk of cancellation of the obligation in the event of the non-arrival of the ship or the cargo. When the ship was pledged, the loan was under a bottomry bond; when the cargo was pledged, a respondentia bond was used. This form of protection continued to be used for hundreds of years, even to a considerable degree after marine insurance in its present form was available. This latter system was devised probably by the Jews when they were banished from France in 1182. During this exodus they originated the bill of exchange, and the insurance policy was doubtless a by-product of the necessity of protection against the loss of their property in removal. The system was a reversal of the bottomry and respondentia bonds. No loan was made but a premium was paid, in consideration of which the amount insured would be paid in the event of the loss or destruction of the property by any of the fortuitous happenings (perils) named in the policy.

The new form of insurance quickly developed and spread throughout maritime Europe. By the fourteenth century it was being used on a considerable scale in the Italian cities, especially by the Lombards, in Spain, France and Flanders and by the Hansa merchants. The development of marine insurance was stimulated by the growth of commerce and by the wars and piracy which made insurance indispensable. It was moreover an auspicious time for the spread of the new aid to commercial intercourse, as oversea activities had greatly increased as a result of the introduction of the mariner's compass and in the subsequent age of discovery. Marine insurance was usually carried on by merchants and shipowners who were accustomed to distribute their investments in several ships and thus spread their possibility of loss. By the end of the seventeenth century marine insurance had been established practically in its modern forms; by the end of the eighteenth England because of the great development of its shipping had secured the lead in marine insurance which it has since maintained.

Marine insurance was introduced into England by the Hansa merchants. It was brought to a high point of development by the Lombard merchants, who followed them and who gained the commercial supremacy in England in the fifteenth century. Corporate underwriting as practised today was unknown, the amount insured being underwritten by individuals, each taking a share of the whole amount required. To facilitate the underwriting of risks merchants and shipowners employed agents who interviewed underwriters at their homes or places of business, obtaining signatures to the policy of insurance. Thus by common necessity appeared both underwriter and broker, the latter the assured's agent. Somewhat later numbers of these underwriters formed the habit of frequenting the coffeehouse of Edward Lloyd. As an aid to his business Lloyd bulletined maritime and commercial news of interest to his patrons, and the brokers found his coffeeshop a convenient place to interview the underwriters. In 1769 the underwriters formed a definite organization under the name of Lloyd's and moved to the Royal Exchange. This was the forerunner of the present powerful Lloyd's, London, with its underwriting activities and its world wide maritime news and commercial services. Corporate underwriting began in England in 1720 with the organization of the London Assurance Corporation and the Royal Exchange Assurance Corporation under a grant of monopoly by the crown. One hundred years later the monopoly was ended and numerous additional companies were chartered. Throughout this entire period the individual underwriters at Lloyd's continued their activities, gradually growing into a most powerful underwriting group. Lloyd's secured an enormous amount of business both domestic and foreign as a result of the revolutionary and Napoleonic wars.

Although individual underwriting was early introduced into the North American colonies, its success was very limited. The first incorporated marine insurance company, formed in 1792, did a large business because of the unsatisfactory experience with individual underwriters; by 1820 the latter had practically ceased to exist. Underwriters suffered great losses during the War of 1812, and marine insurance declined as a result of the almost total disappearance of American shipping from the seas; the consequent

decline in marine insurance resulted in bitter competition and more losses. The subsequent revival of shipping stimulated the marine insurance business, but from 1828 to 1844 insurance companies were crippled by many fraudulent losses. A great development of marine insurance took place in the 1840's and 1850's because of the triumphs of the American clipper ships, which were wresting shipping from foreign countries. Many new companies were formed and they practically all prospered. This development ended with the decline of American shipping after the Civil War. In 1871 moreover foreign marine insurance companies entered the United States and competed with the American companies, many of which were forced out of business. There was, however, a considerable growth of inland waters insurance. Ocean marine insurance increased with the growth of American foreign trade after 1900 and particularly after the World War. The development of marine insurance in the United States has been relatively slow. Because of the retarded growth of a merchant marine and of constant competition with the old established foreign companies an uphill battle has been fought, but today an American marine insurance facility exists adequate to care for the needs of foreign and domestic maritime commerce. Nevertheless, foreign admitted companies do a large share of the underwriting. Thus in 1930 American companies received $31,675,323 in premiums and paid $19,832,999 in losses on ocean marine insurance; the foreign companies received $12,361,528 in premiums and paid $7,668,908 in losses. Foreign companies do considerably less of the inland marine business. In 1930 American companies received $38,238,990 in premiums and paid $19,438,693 in losses on inland insurance; foreign companies received $8,391,006 in premiums and paid $3,628,438 in losses.

The marine insurance policy in use today in the United States and England differs little in its essential features from the earliest known policy issued in the sixteenth century. The contract does not insure against one peril, but against practically all of the fortuitous hazards which may overtake a vessel or its cargo on a sea voyage. In this respect the marine insurance contract differs from the ordinary policy covering fixed property which affords protection against but one peril, such as fire or cyclone or earthquake. The marine policy covers perils of the sea due to wind, wave and storm, perils on the sea such as fire and collision and those other perils that arise from the criminal acts of men (theft and barratry) and those that grow out of conflicts between nations, the so-called war perils.

Another feature peculiar to marine insurance is that the policy is valued; that is, the measure of recovery is determined not by the value of the affected property at the time and place of loss but by the pre-agreed value placed upon the property when it is insured. Only in the case of provable fraud can the valuation provided in the policy be questioned after loss has occurred. The valued policy does not increase the moral hazard, as might be expected, for the cargo is out of the custody and control of the insured during the term of the insurance. Likewise the destruction of the vessel could be effected only by collusion between the owner, the captain and the crew, a remote possibility.

As the policy covers only against fortuitous happenings, it places a high degree of responsibility upon those in whose custody the property is placed: the carrier in the case of the cargo and the master in the case of the hull. In many cases the insurance is broadened to cover some of the negligence hazards; but from the point of view of public policy such extension of cover is unwise, as it leads to a lessening of care on the part of those responsible for the safety of the property.

The cargo policy is an essential document in the financing of oversea shipments. The bill of lading is the evidence that a shipment of goods has been made, the goods being identified by marks and numbers or other designation. In like manner the insurance policy names the assured, the payee of loss, the forwarding steamer or other carrier, the points of origin and of destination, the amount insured and the number of packages and their marks and numbers. It is dated the same day as the bill of lading. The draft or bill of exchange is drawn, attached to the bill of lading and the insurance contract and presented to the bank for discount or for collection. The insurance policy like the bill of lading is a quasi-negotiable instrument and passes title by endorsement. Thus the documents pass from holder to holder until they are finally presented to the ultimate buyer for payment; the latter in any port of the world or at some neighboring commercial center may obtain the indemnity provided by presenting to the insurance company's representative proper proof of loss. The terms and conditions of the insurance are set forth in detail in the insurance policy, but in the

settlement of the claim it is customary in adjusting the loss to follow the commercial and insurance customs of the port of destination. Marine insurance being international in its application strives to conform to local trade customs, which vary greatly among the various nations.

The basic policy covers the property only while it is on board the carrying conveyance. For modern purposes this protection is too limited, and the insurance has been extended by the "warehouse to warehouse" clause to cover the goods from the time they leave the warehouse at the point of origin until in the ordinary course of transit they are delivered to the warehouse at the final point of destination.

Separate forms containing special clauses are provided for the insurance of various commodities, such as cotton, grain, sugar, coal and the like. Policies have also been devised for the insurance of ocean vessels, lake and river craft, yachts and tugboats. One of the distinguishing features of these forms is the clause relating to the percentage of damage necessary to comprise a valid claim, especially with respect to particular average; that is, partial loss. Particular average clauses are of many kinds, the purpose of each being to set forth the conditions under which partial loss claims will be paid. Thus there are clauses which provide that partial loss claims will be allowed only if the loss be caused by stranding, sinking, burning or collision. Other clauses require that the loss shall amount to a certain percentage of the assured value or to a named sum, or it may be required that from the loss as adjusted there shall be deducted a named amount. These latter are called deductible average clauses. The memorandum clause which appears in most cargo policies contains a list of commodities, some with the percentage of loss necessary on each for a particular average claim, while on others partial loss claims are limited to those of a general average nature. This is the only reference in the cargo policy to general average, but claims of this nature are paid irrespective of percentage. The marine insurance contract has thus had incorporated into it the principles of general average and provides indemnity for the ratable proportion of general average charges assessed against the insured property.

Every type of vessel and each kind of cargo presents to the marine underwriter a different problem. The hazards to which sailing vessels or non-powered vessels are subject differ greatly from those presented by an iron or steel steamer. Again there are problems involved in the repair of oil burning steamers and motor ships which must be reflected in the rate. Vessels equipped with twin screws or with radio direction finders and other aids to navigation are better risks than those not so equipped. Fast passenger steamers present a different underwriting problem from that of the slow tramp freighter.

The insurance of bulk cargoes, such as grain, coal and ore, presents individual problems, as do shipments of raw or refined sugar, which are highly susceptible to damage. On the other hand, the basic metals, such as copper, zinc, tin and pig iron, are not susceptible to damage but only to total loss or general average and so are insured at a relatively low rate. Manufactured goods present a range of varying hazards—from copper wire, with little hazard, to radio tubes, which are difficult to ship overseas without incurring breakage losses. Then there are the commodities of a very perishable nature which are shipped in refrigerator space, such as fresh meats, poultry, fish, fruit and eggs. Rates consequently vary widely because of the nature of the insured commodity and the broadness of the protection desired by the assured. Special clauses have been devised to meet the peculiar underwriting problems presented by each commodity. The primary purpose behind each clause is to furnish protection against unexpected and unpreventable loss but to exclude the normal loss or the loss due to the inherent qualities of the subject of insurance. It is an implied condition of cargo policies that losses due to inherent vice or due to improper packing are not recoverable.

The amount, or freight, paid to the owner of the vessel by the owner of the cargo for its carriage is also a subject of marine insurance; but whether the insurable interest is in the shipowner or the cargo owner depends upon the terms of the contract of carriage, namely, the bill of lading. If the freight is prepaid or is guaranteed it has entered into the cost of the goods and is insurable by the cargo owner. If, on the other hand, the freight is payable only on the delivery of the cargo, the freight is at the risk of the shipowner and insurable by him. There are many forms of freight contracts, each of which presents an interesting and sometimes a difficult marine insurance problem.

The amount to be insured normally has little effect on the rate, unless it be so great that it exhausts the available market. In this event higher rates will have to be paid in order to

complete the insurance, the increased rate inducing some underwriters to write increased amounts or interesting underwriters who would not be attracted by the lower rate.

In the United States underwriting is carried on exclusively by corporations. This is true in general in all countries except England, where individual and corporate underwriting flourish side by side. The responsibility of the corporation is limited by its financial structure. The individual underwriter at Lloyd's pledges his all as the security behind his name. Furthermore he can obtain membership in Lloyd's only if he can meet the very severe financial requirements of the organization. These provide not only for proof of his financial worth but also for the deposit of a considerable sum of money (£5000 minimum, although the usual deposit is considerably larger) as a contribution to the general guaranty fund of the organization.

There is a marked difference in the function of the insurance broker in the United States and in England. In the former the broker as agent of the assured places the insurance for and in the name of his client and in the event of loss assists in the adjustment and collection of the claim. In England the broker occupies more of a fiduciary position, normally taking out insurance in his own name for account of his client, paying the premiums, collecting losses and receiving from or paying to his client the debit or credit balance.

In marine insurance as distinct from all other forms there are neither fixed rates nor rating organizations. The fullest and freest competition exists in each market and internationally between the various national insurance centers. Nevertheless, rates fluctuate within very narrow limits because of the keenness of the competition. There is also present another factor, which has a decided effect on rates. No one company or individual can underwrite unlimited amounts; in fact the normal flow of business requires reinsurance facilities which can be purchased only at the approximate market rate. Thus each underwriting unit is restrained from overcommitments by the fear that reinsurance will not be obtainable at a rate equal to or less than the original rate received. Competition becomes destructive when available markets exceed the commercial needs of the world. This condition occurs during each world depression and usually follows a war of any magnitude. Destructive competition in turn leads to associations of underwriters for the purpose of stabilizing or raising rates through the formation of reinsurance agreements, sometimes known as pools.

Within the last twenty years an entirely new field of insurance has been developed. The introduction of parcel post, the development of the motor truck and the specialization of industry by which different stages in the production of goods occur at different locations have made necessary policies which give continuous protection against practically all risks, whether the goods are in transit or in temporary storage or in process of manufacture. The marine policy affording protection against many perils was admirably suited to be the basic form of the many different types of policies required to compass the needs of modern industry. Thus inland marine insurance was conceived and developed. Inland policies are provided for the insurance of jewelry, furs, works of art and in fact any commodity which for a greater or less part of the time is in transit. The development of the airplane has also required many new types of insurance to provide for protection to the plane and to its cargo; the marine policy is again the form upon which special aviation policies are based. In the United States in 1930 premiums on inland insurance amounted to $46,629,996; on motor vehicle insurance, $124,224,727; on aircraft insurance, $1,556,919.

Although for many years marine insurance developed with little or no legislative regulation, this became inevitable because of abuses practised by the underwriters. In 1435 Barcelona began to issue ordinances and codes governing marine insurance, in 1468 the Grand Council of Venice adopted a decree concerning the trial of disputes and in 1523 Florence enacted important legislation. The early legislation was frequently ill conceived and restrictive; insurance courts, however, met with considerable success. There was no legislation in England until 1601, when there was established a tribunal for the trial of disputes which had been previously settled by arbitration. Thereafter legislation developed steadily. At present marine insurance in England is regulated by the Marine Insurance Act of 1906 and the Gambling Policies Act of 1909. In the United States there are various state laws which regulate marine insurance, although the legal restrictions are much less than in the case of life and fire insurance; New York, unlike certain other states, does not limit the amount which any one company can carry on any one risk.

As marine insurance is an international busi-

ness, the companies competing actively in the world's markets, difficulties are created by the national differences in marine insurance laws covering such questions as constructive total loss, effect of unseaworthiness and negligence. Efforts, however, have been made by the companies themselves to secure international uniformity of interpretation and practise as well as to modify the rigors of competition.

There are no bureaus either national or state attempting to fix marine insurance rates. During the World War, however, the American government following the lead of the other belligerents provided state insurance facilities for the protection of hull and cargo against war hazards. Non-belligerent nations made similar provisions. Values increased so rapidly and the war hazards at sea were so serious that the private marine insurance facility neither of the groups of belligerents nor of the neutral markets was adequate to afford protection against war perils. State marine insurance lapsed after the end of the war; it was a war measure and successfully served its purpose. In some cases, however, state insurance has continued in another form: to provide for the tremendous values involved in the modern transatlantic passenger steamers. Many of these are subsidized or financed with money borrowed from governments, and state bureaus have been organized to insure the values in excess of the capacity of the commercial insurance markets.

Great Britain is still dominant in the business of marine insurance; British companies have a network of agents and offices in all parts of the world wherever oversea commerce is in need of an insurance facility. The income from this business is an important item in Great Britain's balance of payments. Only in recent years have American companies similarly extended their operations; this has occurred not through the activity of any single company but through the formation of a syndicate of companies, which is carrying on an active business in many of the important foreign maritime communities. These developments are a logical growth of the increasing world wide scope of the commercial and financial interests of the United States.

Were it not for marine insurance oversea commerce on the gigantic modern scale would be impossible; it provides the necessary protection for the exchange of commodities and of the gold necessary to settle international balances and for the construction and operation of the modern ocean greyhound or freight ship. Marine insurance premiums from foreign sources are one of the invisible items in the building up and settlement of international balances. It is of vital importance that a country control as far as possible the insurance on its own ships and cargoes. In the event of war a national insurance facility together with a national merchant marine is necessary to guarantee the continuance of the nation's oversea trade. Free marine insurance competition between the national markets aids greatly in the free exchange of commodities at a minimum of cost. Any regulation of an instrument of international commerce, as marine insurance is, has a decided tendency to make the regulated market the target for the uncontrolled competition of every competing market.

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See: INSURANCE; SHIPPING; INTERNATIONAL TRADE; MARITIME LAW; FIRE INSURANCE; AUTOMOBILE INSURANCE.

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MARITAL PROPERTY. In no field of law during the past century has there been more radical change than in the property relations of married persons, particularly in the countries

which have followed the English common law system. On the continent the general codification movement has materially reduced the previous diversity in practise. Generalization, however, is as yet very difficult. Legal systems still give extremely diverse answers to questions of marital property law, and the confidential nature of the relationship between husband and wife has hindered progress in dealing with them. Every system of law must solve certain problems, as, for example, the effect of marriage upon the property previously owned, the management and control of such property and also of subsequent acquisitions for the duration of the marriage, the devolution of the various types of property when the family becomes disorganized as the result of death or divorce. The solution of these problems is affected by the prevailing views as to the constitution of the family and the nature of marriage.

In early legal systems efforts were made to keep the property in the family group intact; thus there was as yet no real recognition of matrimonial property relations. The family in its narrower sense and not the individual was still the important property unit; the head of the family was a sort of trustee, and the property was largely under group control. It was not until social disintegration had taken place within the family that more radical changes came about.

In early republican Rome, when marriage *cum manu* was the prevailing form, married women had few legal rights. The proprietary relations between husband and wife were placed upon the same footing as those between a paterfamilias and the children *in potestate*. Property owned by a woman prior to marriage as well as property of all kinds however acquired thereafter passed by operation of law to her husband. In some cases this transfer carried with it the liability for the wife's antenuptial obligations. Upon her husband's death, however, the wife had the same rights of succession as the children *in potestate*, although she remained subject to tutela, or guardianship, which represented an effort to keep within the family the property she had thus acquired. This system changed with alterations in the nature of marriage. Marriage *in manu*, created by *confarreatio*, *coemptio* and *usus*, gradually became obsolete and in its place there developed free marriage, or *matrimonium juris gentium*. This type of marriage gave the husband no such power over the wife as he had previously possessed. The wife's antenuptial property continued to be hers; acquisitions from whatever source during coverture did not accrue to the husband but were her sole property. Furthermore she had unlimited power to deal with such property: no control was vested in the husband. Thus there developed under the Roman law the principle of a separate estate in the married woman. On death neither spouse had any right in the property of the other. The wife, it is true, continued under the guardianship of those appointed by her parents after the marriage, but the tendency of the later law was to reduce the power of a woman's tutor to nullity. The result was that a married woman had a great proprietary independence. Such control over the property relations of married persons as existed was by virtue of the Roman dotal system. The dotal property consisted of the *dos*, or dowry, and the *donatio propter nuptias*, the gift from the husband to the wife. By the third century A.D., when the new conception of marriage had come completely to prevail, gifts between the spouses during coverture were prohibited; such gifts, which were originally unrestricted, had to be made before the marriage took place. Justinian allowed gifts in favor of marriage; the reason for the previous prohibition of such gifts was the prevention of foolish generosity.

The freedom of married women in Rome with regard to property affairs was not, however, to continue. Reaction set in because of the disfavor with which the Christian church regarded the freedom and laxity prevailing in the Roman law of marriage. With the superimposition of barbarian practises and laws women again became subject to the various forms of archaic guardianship, which were carried over into the codes of the Middle Ages. From the Roman law the independence of unmarried women survived; from the barbarian codes the husband obtained over the wife the powers which once had belonged to her male kin. The canon law and not the Roman exercised a powerful influence, and the former tended to perpetuate the proprietary disabilities of married women. The conflict between the secular and the canon law was widespread, but in the end the latter gained the ascendancy.

Prior to the establishment of the feudal system, which because of the necessities of military tenure was unfavorable to their holding land, married women had acquired both in England and on the continent certain proprietary capacity. There is considerable evidence that on the continent among the Germanic peoples the

personal property (*Gerade*) given a woman by her family upon her marriage was under the complete control of the wife and that she had the power to alienate it without her husband's consent. The morning gift and earnings were the wife's property, although during the husband's lifetime they were probably under his control. Under the Anglo-Saxon law the wife apparently had considerable property rights. She had absolute ownership of the morning gift, and it seems that with her husband she was copossessor of the family property. The husband could not alienate his property without her consent.

The English common law in regard to marital property relations was an outgrowth of a conception of marriage which was strongly influenced by the canon law because of the control of marital problems by the ecclesiastical courts. It carried the subjection of the wife to its logical extreme. As Blackstone said: "By marriage, the husband and wife are one person in law: that is, the very being or legal existence of the woman is suspended during the marriage, or at least is incorporated and consolidated into that of the husband" (*Commentaries*, 1, 442). All the personal property which was in the wife's possession at the time of the marriage vested absolutely in her husband. With it went absolute control: the husband could dispose of it during his life or bequeath it at his death; if he died intestate it went to his personal representatives. The case was similar with respect to personal property which the wife acquired in any way during the marriage. The wife's "paraphernalia," her dress and personal adornments, if not disposed of by the husband during his lifetime became hers absolutely; creditors, however, could enforce claims against it. The wife's choses in action, however, became the husband's only if he brought suit to reduce them to possession. In regard to the wife's chattels real, such as leases, the position was somewhat different. If the husband did not actually appropriate them during marriage, they vested absolutely in the wife if she survived him. If the husband survived, the chattels real belonged to him by marital right and not as representing the wife. Chattels real were liable for the husband's debts, and their rents and profits belonged to him. By the right of the marriage the husband had in his wife's estates of freehold an estate which lasted until his or her death, from which he was entitled to the rents and profits free from any claim of the wife. The husband could alienate this estate without his wife's concurrence. The seisin was said to be in him and his wife jointly. If, however, the wife survived the husband, she and her heirs were entitled to the land even though the husband might have made some disposition thereof. Because the wife had no property over which she had control during the coverture and because of her general contractual incapacity, which was due entirely to her proprietary disabilities, the conveyance of a married woman was absolutely void. The land could be effectively conveyed only by the levying of a fine by husband and wife.

In addition to his other marital property rights the husband had the right of curtesy. If a child of a marriage was born alive and capable of inheriting from its mother, the husband had an estate of curtesy initiate in the freeholds of inheritance of which his wife was seised. Upon the death of the wife with the husband surviving this became an estate by curtesy consummate, entitling him to an interest for life in all his wife's inheritable estates. By the time of Bracton the husband was called "tenant by the curtesy of England" (*tenens per legem Angliae*). Pollock and Maitland have suggested that the origin of curtesy may be the husband's profitable guardianship over wife and children. Feudalism also played a part. Whatever its origin it became thoroughly established as a part of the law of England, which favored it greatly. The wife's equitable estates were subject to curtesy, provided the wife was seised at law. The husband's estate by the curtesy did not terminate on his remarriage. Moreover the fact that the land had been conveyed to the wife's sole and separate use did not of itself prevent the husband's curtesy, if the wife had not transferred the property.

The husband's right over the marital property was to some extent offset by the wife's right of dower. Originally determined by custom or agreement, the right of dower had by the end of the Anglo-Saxon period become a legally fixed right of every married woman to a life interest in a third of the land of which her husband had been solely seised, during the marriage, for an estate of inheritance which issue of the wife might by possibility inherit. Thus the husband could not deprive the wife of this right by any alienation. Because of the inconvenience of his situation many ingenious legal methods were devised to bar it. These were made possible by the fact that, differing from the case of curtesy, dower did not attach to equitable estates. Uses and powers of appoint-

ment were employed to avoid passing the legal title. The Dower Act of 1833 entitled a widow to dower in equitable as well as legal estates, but it was also provided that it should attach only to those estates to which the husband was beneficially entitled at his death. A husband could thus bar dower rights by either deed or will.

At common law also if land was conveyed to husband and wife as joint tenants, they became "tenants by the entireties." In contemplation of law such an estate vested in one person, the husband and wife: they were deemed seised of the property, *per tout et non per my*. The chief characteristic of the tenancy by the entireties was the right of the surviving spouse to take the whole property. During his lifetime, however, the husband was entitled to all the rents and profits of the land so held.

The first real improvement of the legal situation of the married woman in England came in equity. In return for the extensive rights which the husband acquired in his wife's property he was under an obligation to support her, but the remedy for neglect was imperfect. Equity came to the assistance of married women in two ways: first, by introducing the doctrine of the wife's "equity to a settlement" in certain cases, that is, when the husband sought the aid of equity in regard to his wife's property, equity would compel him to make adequate provision for her and her children; second, by the development of the doctrine of an "equitable separate estate." Thus property of all kinds settled upon the wife for her sole and separate use was freed from the control of her husband and from liability for his debts. Later, even though no trustees were named, as long as there was a clear intent to free the property from the husband's control, he was regarded as trustee for the wife. It became customary to insert a provision in the instrument creating the separate estate which placed restraints upon the wife's alienation of the property and thus protected her from her husband's persuasion; such restraints were enforced. Unless there was other provision, the husband's rights revived upon the wife's death. As a result of the creation of an equitable separate estate the wife obtained a limited contractual capacity; the English chancery courts decreed performance against such separate estate but did not impose any personal liability. By the nineteenth century there had long been an endeavor to secure for a married woman through equity the right to hold property independently of her husband and to obtain for her such rights over property as a man or an unmarried woman would have. Marriage settlements, as they were called, were common among the propertied classes; and equity acted mainly to insure the carrying out of the settlors' intentions.

During the course of the nineteenth century, largely as a result of the movement for the emancipation of women, the legislatures in both England and America passed the so-called Married Women's Property acts. In England statutes in the 1870's were forerunners of the Married Women's Property acts of 1882 and 1893. In the United States this type of legislation became common about 1850, although some states acted even earlier. The purpose of these statutes was to create a "statutory separate estate" freed from the claim and control of the husband and not liable for his debts. Quite universally the property acquired prior to marriage became the separate estate of the wife, and generally property acquired by her during coverture by devise, descent, purchase or other means was similarly included in it. The husband's control over the statutory separate estate has been wholly or partially taken away, depending upon the wording of the statutes. Quite generally the wife has been given the right to dispose of her estate as if she were unmarried; some states, however, require the husband's joinder in transfers of real property.

In England neither curtesy, dower nor tenancy by the entirety was held to be ipso facto totally abolished by the Married Women's Property acts. The wife could, however, by disposition *inter vivos* or by will defeat her husband's right to curtesy. The situation was thus the same as with respect to dower under the act of 1833. Both curtesy and dower were finally abolished in England by the Administration of Estates Act of 1925. There were some curious survivals of the theory of entireties in England despite the Married Women's Property Act of 1882, by which a joint limitation to husband and wife without words of severance created an ordinary joint tenancy; but these likewise were abolished when the Law of Property Act was passed in 1925.

In the United States because of the diversity of jurisdiction the situation has naturally been very complex. Here the general interpretation of the Married Women's Property acts has been that they did not abolish the husband's right to curtesy upon his wife's death. Generally it has been held that a wife may bar curtesy by deed

but not by will. Frequently, however, it has been provided by statute that curtesy can exist only in property which the wife has not transferred either *inter vivos* or by testamentary disposition. Statutes in many jurisdictions have expressly abolished curtesy, and some have preserved only curtesy consummate while abolishing curtesy initiate. In certain jurisdictions the husband's interest has been made similar to the wife's dower right. As far as dower is concerned, contrary to English law it has generally been impossible for a husband to bar it by either deed or will, although in the very early years of their history a few states—Connecticut, Vermont, North Carolina and Tennessee—enacted statutes to this effect. The most recent tendency has been both to abolish dower altogether and to give the surviving spouse a definite interest in all kinds of property left by the deceased, a much less cumbersome system. Moreover the Married Women's Property acts have not, as a general rule, been interpreted as abolishing estates by the entireties by implication. Some jurisdictions, however, without the aid of any particular statute have decided that such estates can no longer be created, since they were founded upon an outworn conception of marriage. Statutes in some states have converted them into tenancies in common, under which there is no right of survivorship.

The variety of marital property systems in the countries of western Europe since the early Middle Ages has been particularly bewildering. In some places the Roman dotal system survived. In others systems of community property were recognized, but these too were extremely diverse. Again there was no recognition of community property. To quote Holdsworth, there was "the co-partnership in acquisitions recognized in Spain and south-west France, the co-ownership of movables and acquisitions recognized in France in the *pays du droit coutumier* and in some parts of Germany, and the co-ownership in all property recognized in other parts of Germany. Into the class of regions not recognizing community of ownership fall England, Normandy, a large part of Germany and Switzerland, the *pays du droit écrit* and some parts of the east of France, Italy, and the parts of Spain which recognized the system of the Roman *dos*" (*History of English Law*, vol. iii, p. 522). The type of community property holding owed its origin undoubtedly to the custom of certain Germanic tribes, modified to some extent by the influence of Roman civil law. It was probably introduced into France by the Franks and into Spain by the Goths.

The regime of community property now exists in many continental countries and other parts of the world. The Roman-Dutch law brought it to south Africa, and French and Spanish law carried it over to America. Because of the influence of France and Spain in Louisiana, of Mexico in New Mexico, California and Texas, it was adopted in these states and it has been extended to Arizona, Washington, Idaho and Nevada.

Under the community property system the husband and wife are considered as constituting a marital community. The fundamental idea of the system is that whatever is acquired by the husband and wife is part of a common matrimonial fund. The husband or the wife may, however, also have "separate" property, either owned at the time of the marriage or subsequently acquired. Generally the husband is looked upon as the managing agent; such share as the wife may be entitled to comes to her after his death. There is of course great variation between the different community property systems, particularly as to the type of property which forms part of the community and the powers of the spouses with respect thereto. Moreover when it is said that community property is a recognized regime in a certain country, this does not mean necessarily that it is compulsory. Freedom of contract with respect to marital property is quite generally allowed; thus in some countries the community system prevails only when it has been expressly adopted as the matrimonial regime, while in others it is the legal regime in the absence of express agreement.

Both the French Civil Code, which became operative in the early part of the nineteenth century, and the German Civil Code, which went into effect at the opening of the present century, still plainly show the marks of their historical antecedents. Under the French code, unless the spouses have otherwise contracted, the marriage brings about a community of goods. The community regime is therefore the statutory regime. Spouses, however, may also choose to be governed by a dotal regime regulated by the code. Under the community regime all movables, both those owned by either spouse at the time of the marriage and those subsequently acquired unless expressly given for the benefit of one spouse, are included in the community of goods. Immovable property is in-

cluded only if purchased with community funds or acquired in exchange for community goods. The general management of the community rests with the husband, but he is restricted in disposing of it. All family expenses are chargeable against community funds. If the marriage is dissolved by death or divorce, one half of the property goes to the husband or his heirs and one half to the wife or her heirs. Only the husband can dispose of his share by will.

In the German Civil Code, which was unable to introduce a single, exclusive marital system, because of the great legal diversity of marital property in the German states, the historical background is likewise apparent. The German statutory regime is one not of community property but of administrative community. Separation of estates is the legal regime under certain special circumstances, as in the case of elopement. But the code regulates also three forms of community property which may be adopted by the marriage contract: a general community of property, a community of income and profits or a community of movables. General community of property includes the property owned by the husband and wife at the time of the marriage and all subsequent acquisitions with the exception of transfers expressly made to one of the spouses as separate property. The community of income and profits includes as community property only the income, profits and earnings accruing to either spouse during coverture, other than income derived by the wife from certain types of property conveyed to her as separate property. Under the community of movables those belonging to either spouse at the time of the marriage or subsequently acquired, except property given to either as separate property, are considered as the community. According to all three systems the husband has the management of the community, but in general the wife is protected against dispositions made by the husband. The surviving spouse is entitled, after the debts have been paid, to one half of the community property; the other half goes to the heirs of the deceased if it is not disposed of by will.

With respect to the eight community property systems in the United States four theories have been propounded as to the nature of the ownership of community property. Until recently California maintained the "single ownership" theory; namely, that the husband owns the community property and the wife has a mere expectancy and not a vested interest and that her interest is a sort of encumbrance upon the absolute title of her husband and is vested only if he has predeceased her. By recent statutory changes, however, it has been provided that "The respective interests of the husband and wife in community property during continuance of the marriage relation are present, existing and equal interests under the management and control of the husband" (California Civil Code, sect. 161a). The husband cannot alienate the community property in fraud of the wife, give it away without her consent or dispose of more than one half of it by will. Washington has adopted the "entity" theory; that is, that the spouses constitute an entity which owns the community, the parties having equal rights and interests but the husband being the managing director. The husband has the sole power of disposition, just as he has in regard to his separate estate. A result of the so-called entity theory is that the community is not responsible for the separate obligations of the husband. The Idaho theory of "double" ownership, which has been followed in Arizona, Nevada and New Mexico, holds that each spouse owns an undivided and indivisible half of the community property. Texas has adopted the "trust" theory; that is, that the interests of the spouses are beneficially equal. The husband has the legal title; the wife's interest is vested as equitable. The various theories have not always been consistently followed even in the states which have adopted them.

The idea behind the community property system is on the whole a sound one, apart perhaps from the almost exclusive powers of management given to the husband. It recognizes by law the equality between the spouses in regard to property acquired during the marriage by the joint efforts of the parties. Even in the states following the common law system the community idea exists to a considerable extent extralegally. Especially among the middle class the property consists largely of the earnings of the spouses; a large share of such income is necessarily devoted to family expenses and little is left after such obligations have been met. In practise this amounts to a community of matrimonial gains. It is true that statutes accord to the wife her earnings outside the home as her "separate property"; but in the great majority of cases such earnings go to satisfy the current needs of the family. The community idea is in harmony with the present American conception of marriage, whereby the relation between

the spouses is regarded as a partnership to which both contribute.

A. C. JACOBS

See: FAMILY LAW; MARRIAGE; FAMILY; WOMAN, POSITION IN SOCIETY; GUARDIANSHIP; DOWRY; GIFTS; INHERITANCE; SUCCESSION, LAWS OF; DIVORCE; ALIMONY; HOMESTEAD EXEMPTION LAWS; PROPERTY.

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MARITIME LAW is a branch of law which deals chiefly with the legal relations arising from the use of ships. In the Anglo-American system, however, this branch of law is known as admiralty law. In the Middle Ages the scope of the maritime law was considerably wider. It dealt not merely with the subjects included in the modern maritime law but also with the primitive forms of some branches of the modern commercial law, and it even contained the rudiments of that public law which is now styled international law. It must be remembered that commercial transport was from the earliest until comparatively recent times almost invariably by water, in ancient times because the known world was situated around the shores of a great sea and in the mediaeval period because of the hazards and vexations of travel on land. The intimate connection between the maritime and the commercial law has never been wholly lost on the continent. Like the commercial law the maritime law has until recent years developed almost entirely on a customary basis, and the influence of legislation on its substantive content has never been great. Because of the necessary and permanent conditions of trade a tendency to uniformity has also characterized the maritime law, so that it has always had a cosmopolitan character.

The ancient civilizations—Minoan, Mycenaean, Babylonian, Egyptian, Phoenician, Greek —must have had codes or customs of maritime law, but almost nothing has survived. Of the maritime code of the island of Rhodes, dating from the third or second century B.C., which was accepted by both Greeks and Romans, there has demonstrably survived only the *Lex rodia de jactu*. Found in the Digest of Justinian it contains the earliest known provision as to general average. Only the Romans and the English never had a separate code of maritime law, and the maritime law of Rome is to be found in scattered places in the *Codex* and the Digest. The provisions, however, clearly define the parties to the maritime adventure; the shipowners' responsibility for goods shipped, for a passenger's baggage, for the captain's contracts and for the seamen's torts is well established. There are rules as to general average, contribution, jettison and salvage. The maritime loan, of Greek origin, is well known; maritime insurance was in use; a charter party of 236 A.D. is extant.

The first known collection of the maritime laws of the later Roman Empire is imitatively called the Rhodian Sea Law; dating from the eighth century its name testifies eloquently to the enduring reputation of the older code during a millennium. The Rhodian Sea Law is apparently a compilation of earlier customary material but it shows also a responsiveness to new needs; it treats chiefly of losses at sea and of commercial risks in addition to most of the matters already covered by Justinian. It is of historic importance because it was in use in the south of Italy until the fifteenth century and so must have had a great influence in Italy while the Italian maritime law was developing.

In the eleventh century the Italian codes of maritime law commence. Whether or not the *Ordinamenti di Trani* were compiled, as they purport to be, in 1063, it is not improbable that the maritime customs recorded therein were in effect at that time. This is likewise true of the *Tabula amalphitana*, part of which probably was compiled during the eleventh century. The *Constitutum usus* of Pisa dates from 1160, the *Assises de Jérusalem* from 1187, and by the end of the thirteenth century many of the Mediterranean cities possessed their own compilations of maritime customs.

The first known collection of maritime customs made by an Atlantic seaport is the Rolls of Oléron, which by the better opinion is dated in the first half of the twelfth century. Showing indirectly the influence of the Rhodian Sea Law it was accepted as the common maritime law in the countries on the Atlantic Ocean and on the Baltic; it was in use in the western Mediterranean countries and most of its provisions were adopted in the Baltic codes. The rules of the Rolls were followed in the local courts of London, Southampton and Bristol as well as in the courts of the English admirals in the fourteenth century; in 1647 the first General Assembly of Rhode Island (then called Providence Plantations) enacted that the Sea Laws, otherwise called the "Laws of Oleron, shall be in force among us"; and in 1779 when the state of Virginia created a court of admiralty a provision was made that it should be governed "by the laws of Oleron, and the Rhodian and Imperial laws," so far as theretofore in force in England.

As early as 1320 Wisby had a code of maritime laws which was in large part derived from the laws of Oléron. It does not appear to have been of any influence except in the north of Europe. The Consulate of the Sea (*Consolato del mare*) was compiled at Barcelona about 1340 and it is accepted as being of Catalan origin, perhaps of the middle of the thirteenth century. The Consulate was not a code established by public authority, for its provisions were not couched in imperative terms; it simply stated, explained or commented on usages. Translated into many languages it has had a tremendous influence in the western Mediterranean and in Italy. In the late fourteenth century the Hanseatic League began to adopt maritime ordinances; and as their number increased, codification became necessary. The first codification was made in 1447 and there were others in 1530, 1572 and 1591 under the auspices of Lübeck. This last code printed in 1592 and translated into Dutch, was of much influence in the north of Europe.

The last of the great maritime codes is the French *Ordonnance de la marine* of August, 1681, one of the great achievements of the reign of Louis XIV. In France as elsewhere in continental Europe after the Middle Ages the maritime cities of importance had proceeded far toward particularism. The king intended to create a general and national maritime law conforming to the ancient customs but appropriate also to new needs. The code was ten years in preparation, for Lambert d'Herbigny, marquis of Thibouville and councilor of state, had been entrusted with the undertaking as early as January 1, 1671. His recommendations were deliberated upon by a commission at Paris, which sometimes con-

sulted the opinions of foreign jurisconsults. The resulting *Ordonnance*, complete and methodical, opened a new era in continental maritime law, and many of its provisions are in force in France and elsewhere today. Upon its publication it was immediately translated into English, and its authority was very persuasive in England. As a codified statement of the generally existing customs of the late seventeenth century it was not infrequently cited in American admiralty courts until a generation ago.

The rise of the mediaeval commercial consuls has been briefly traced in the article dealing with the law merchant (*q.v.*). Consuls of the sea first appeared at Pisa late in the twelfth century; and the Pisan maritime court, originally a court of the Pisan maritime guild, was probably erected into a municipal court in the summer of 1200. It took cognizance of maritime matters, of disputes relating to freights and shipments, of loans and commercial documents connected with maritime affairs, of profits, losses, average and seamen's wages; of merchants, shipbuilders, carpenters and other tradesmen and artisans. Doubtless the court had jurisdiction over some of these trades only when they were concerned with maritime matters, because the test of its jurisdiction came to be based, like that of the modern American admiralty, on the nature of the cause rather than on the status of the individual.

It is particularly interesting to note that the prevalence of piracy was an important factor in stimulating the creation of maritime courts. Such courts were quickly established in many cities. At Barcelona the court created in 1279 was originally a guild court; by 1347 it had become a maritime court with an added court of appeal. Its existence is of importance from the Anglo-American viewpoint because of the influence which it must have had on the early English courts of admiralty. Indeed "The Judicial Order of the Court of the Consuls of the Sea" was incorporated in full in the English *Black Book of the Admiralty*.

If there was no true court of admiralty in England in the thirteenth century, the reason seems to be the backwardness of English commerce in this period. In so far as the mariners and merchants of the time desired a swift, informal and equitable justice they would have found it in the mediaeval English local courts, if these had not disqualified themselves by their primitive and insular dislike of foreigners. During the first half of the fourteenth century there was a rising stream of complaints by foreign sovereigns to the king of England as to piracies and spoils committed by Englishmen at sea and as to the inability of the aggrieved foreigners to obtain justice. After attempts to remedy the state of affairs locally the only other possible alternative was to create a royal court, and sometime after 1340 and before 1357 the courts of admiralty were established. Thus to begin with they constituted a kind of department of state to settle dangerous international disputes. A more general commercial jurisdiction was claimed by the new courts and appeared by the end of the fourteenth century, but right up to the reorganization of the court in the early sixteenth century its jurisdiction appears to have been very limited. A large majority of all the cases were concerned with piracy, spoil and reprisal, all cognate subjects. Wreck and the admiral's droits would include most of the remainder. Such matters as seamen's wages, average and contribution, contracts, partnership, insurance and commercial paper were almost or quite unknown. The commercial cases of foreigners went to their own special courts; the commercial cases of Englishmen went to the local courts; the lesser and ordinary maritime cases went to the local maritime courts, of which there were many. The national courts of admiralty were distant, slow and inefficient, so that their early efforts to encroach on the local jurisdictions were easily repelled. Moreover the Cinque Ports and other important maritime cities managed to secure exemption from the admiral's jurisdiction for their local maritime courts. The Admiralty must always have been unpopular among the semipiratical population whose activities it attempted to restrain. It was almost incessantly in some kind of conflict with the town courts. When it tried to extend its commercial jurisdiction the towns were powerful enough to restrain it by statute in 1389, 1391 and 1400. With the political breakdown of the central government in the latter part of the fifteenth century the courts of admiralty apparently ceased to be of much importance.

What the Court of Admiralty was and what it hoped to be at this time are reflected in the *Black Book of the Admiralty* compiled in the time of Henry VI from both earlier and contemporaneous materials. Its eleven documents roughly arranged in chronological succession are interesting in many ways. The third document shows that about the middle of the fourteenth century jurisdiction was claimed over contracts

made beyond the seas or within the floodmark. The fourth document is a copy of the Rolls of Oléron; the fifth is the Inquisition of Queenborough settling the jurisdiction of the admiral. The sixth shows that while the Admiralty was considering civil law procedure it was not in use up to the middle of the fifteenth century. The seventh, entitled *De officio admiralitatis*, shows that in actual practise in all criminal cases the common law presentment and inquest and jury trial were used. At this period the courts of admiralty were courts of record, contrary to the not too scrupulous opinions of Coke and others in the seventeenth century.

In the fifteenth century and even earlier there were other attempts to see that maritime justice was done. Sometimes the Council interfered and sometimes the Chancery. The Statute of Truces in 1414 removed piracy and spoil cases from the admiralty jurisdiction to that of the Conservators of Truces, who likewise proved to be ineffectual and lost their jurisdiction in 1450. About this time the nadir of the courts of admiralty was reached. Their substantive law of persons and causes was too limited and their common law procedure was too slow and too inefficient.

The reason which caused their creation helped their recovery. In the later fifteenth century piracy flourished more vigorously than ever before. With the ending of the Wars of the Roses and the accession of the Tudors tranquillity, a firm government and prosperity returned to England. The discovery of the New World changed all the trade routes and the commerce of England, which lay no longer on a by-way but on the main road, was vastly extended. Meanwhile the common law had been gradually expanding and quietly absorbing the local courts, whose power was definitely dwindling in the sixteenth century. The golden age of the English admiralty courts began under Henry VIII and they were given what they had never before possessed, a full commercial and maritime jurisdiction, as well as considerable criminal jurisdiction. Almost simultaneously the collegiate study of the civil law began, and the civilians immediately flooded into the revived court as judges and advocates.

During Elizabeth's reign, however, the common law courts began to attack the jurisdiction of the admiralty courts by issuing writs of prohibition. In 1575 an agreement providing for concurrent commercial jurisdiction was reached between the admiralty and common law courts, but after 1606, when Coke became a judge, it was repudiated. From this conflict the litigants naturally suffered. Another agreement was concluded in 1632, partly diminishing but otherwise confirming the admiralty jurisdiction; and, oddly enough, although the common law triumphed as a result of the civil war, yet ordinances of the Commonwealth in 1648, 1649 and 1653 conceded to the admiralty courts a jurisdiction similar to that of 1632. After the civil war the ordinary courts acquired complete jurisdiction of commercial causes and most of the Admiralty's jurisdiction over maritime causes. Efforts supported by the merchants to restore the admiralty jurisdiction failed. Its civil jurisdiction was reduced to torts committed on the high seas, contracts made on the high seas to be there executed, some kinds of bottomry bonds, seamen's wages except where the contract was under seal, the enforcement of the judgments of foreign admiralty courts, salvage only when the property was not cast ashore and certain disputes between joint owners of a vessel. Once again and for a longer time the admiralty courts underwent a period of decline, until during the Napoleonic era Lord Stowell settled the principles of the prize jurisdiction of the Admiralty. Modern legislation, particularly in 1840 and 1861, restored to the English Court of Admiralty many of the powers and much of the jurisdiction of which it had been deprived in the seventeenth century; but nevertheless it may be said that the maritime law now administered there is no longer international but essentially English.

This was signalized in 1873 and 1875 by the incorporation of the Court of Admiralty with the other courts as a branch of the High Court of Justice The Admiralty Division now has jurisdiction with process in rem of bottomry, cargo damage, collision, necessaries supplied to a ship, salvage, ship mortgages and wages; process in personam may likewise issue in any of the foregoing matters and also in towage, in disputes between owners and in building, equipping and repairing ships.

But while the admiralty courts were declining in England they were entering upon a new lease of life in America. Almost as soon as colonization began, attempts were made, although unsuccessfully, to establish vice admiralty courts, primarily in order to protect the trade and fishing monopolies. In Massachusetts admiralty cases were at first tried in the ordinary civil courts, and the same was true in early Virginia and Maryland. The next step forward was made in

Jamaica, where as the result of widespread and almost uncontrollable privateering and piracy a vice admiralty court was set up in 1662, which soon exercised a wider jurisdiction than the English admiralty courts. After the Restoration there was a continuous effort to organize and maintain a colonial admiralty system. The basis of the American colonial admiralty jurisdiction was always the royal patent to the governor or the admiral's patent to the vice admiral or to the vice admiralty judge. These patents were widely drawn and purported to give a complete "civil and maritime" jurisdiction. In 1678 Sir Edmund Andros received the first of a long series of admiralty commissions for New York; as early as 1696 there was a vice admiralty court sitting in New York City; from 1715 on there are reports of many cases decided there. In 1697 the vice admiralty courts in the colonies were systematically organized; their jurisdiction was wider than that of the English Admiralty and particularly included the enforcement of the unpopular acts of trade. Judges trained in the civil law were so rare in the colonies as to be almost unknown, and some complaints were made about the unfitness of the provincial vice admiralty judges and their ignorance of the civil and maritime laws. So far as the New York reports show, however, the bar itself was ignorant of English admiralty practise and traditions until well into the nineteenth century. On the other hand, a simple American admiralty practise had developed in New York at least as early as 1760. There is no evidence of any attempt by any common law court sitting in that colony to issue prohibitions against the vice admiralty.

After the revolution most of the states erected their own courts of admiralty, usually continuing the older provincial courts. In succession to the old acts of trade the customs laws and similar laws were enforced in these courts. Pursuant to their policy of nationalizing commerce the authors of the federal constitution abolished these state courts and gave to the federal courts "all cases of admiralty and maritime jurisdiction." Since admiralty and maritime are by no means synonymous, this dichotomous phrase implies that the draftsman who used it not only knew something of the historic struggle between the English admiralty courts and the common law but also was acquainted with the wider jurisdiction exercised by the American vice admiralty courts and that he wished to avoid the former situation and to continue the latter. The records are silent as to any explicit intent. In the Judiciary Act of 1789 Congress enacted that the admiralty and maritime jurisdiction should extend to all "waters which are navigable from the sea by vessels of ten or more tons burthen." Despite this hint the judges debated learnedly for some decades whether the mediaeval statutes restraining the English Admiralty had vigor in the United States; at last they held that the English restrictions were never applicable and that an American admiralty court's jurisdiction extended to all maritime contracts, torts and offenses; likewise that that jurisdiction was not limited to tide waters but extended throughout all the public and navigable inland waterways of the nation, including even interstate canals.

But the Judiciary Act of 1789 contained another clause, which has recently led to some difficulty: "saving to suitors . . . a common law remedy, where the common law is competent to give it." This has been construed as preserving the common law jurisdiction in many cases and as meaning that wherever there is concurrent jurisdiction the aggrieved party and he alone may select his forum. The Supreme Court has also stated a general rule to test whether or not jurisdiction is concurrent: if the cause of action is cognizable in the admiralty and the suit is essentially in rem against a thing itself, then even though process also is issued against the thing's owner, the proceeding is exclusively in admiralty; on the other hand, if the cause of action is not cognizable in admiralty or if the suit is essentially in personam against an individual, then even though there is an auxiliary attachment against the thing or against the individual's property in general, the proceeding is according to the course of the common law and within the saving clause of the statute.

The modern procedure in rem is the mainspring of effective power in the Anglo-American admiralty jurisdiction because there alone in modern jurisprudence can the title to a res be so utterly dealt with as to bind the whole world, whether or not the owner is a party to the action. The existence of a maritime lien and the right to proceed in rem are reciprocal. The maritime lien is very different from the common law lien, which exists only so long as the lienor retains possession of the res. The maritime lien is in the nature of a proprietary interest in the res, which arises simultaneously with the cause of action. Because of its secret nature it is *strictissimi juris* and is not to be extended.

Another difficulty of modern American practise involves the effect to be given to state stat-

utes dealing with maritime matters. While no state can confer jurisdiction on its courts to proceed in rem, a state can create new liens for matters enforceable within the admiralty jurisdiction. On the other hand, a state cannot make a contract maritime which is not inherently of that nature; nor can it create a maritime lien on a non-maritime cause of action. So far as the federal courts are concerned such a lien is held simply to be a non-maritime lien.

Of recent years, however, the Supreme Court has introduced a new test, which may result in the supremacy of the maritime law over much legislation. In 1917 that court held that the workmen's compensation law of New York was invalid when applied to the case of a stevedore killed while loading a vessel, because it created a substantive right of a maritime nature enforceable in a state court alone. The Judiciary Act of 1789, thought the court, did not preserve any common law rights but only a common law remedy. No state legislation affecting the substantive maritime law, said the majority, "is valid if it . . . works material prejudice to the characteristic features of the general maritime law or interferes with the proper harmony and uniformity of that law in its international and interstate relations" (Southern Pacific Co. *v.* Jensen, 244 U. S. 205, 216). Congress immediately attempted to remedy the matter, amending the act of 1789 by adding to the saving clause "and to claimants the rights and remedies under the workmen's compensation law of any state." In 1920 this amendment was held to be unconstitutional (Knickerbocker Ice Co. *v.* Stewart, 253 U. S. 149). Thereupon in 1922 Congress reenacted the amendment but excluded from its scope injuries to the master and the crew. In 1924 the Supreme Court again declared the amendment unconstitutional (State of Washington *v.* W. C. Dawson, 264 U. S. 219). It appears to be settled therefore that no state will be permitted to introduce any discord into the harmony of the general maritime law, but no legal ear is musical enough to catch all the possibly discordant tones in view of the vague generality of the new rule.

Just what is comprised in "the general maritime law" whose limits American courts of admiralty ascertain with complete independence under their constitutional grant of power it is difficult to say with precision. Certainly it includes all kinds of cases of which the provincial vice admiralty and perhaps of which the state admiralty courts had cognizance. Certainly also the line to be drawn runs outside of that which circumscribed the English Admiralty in the late seventeenth century. Perhaps knowledge of legal history justifies the belief that the changing necessities of maritime commerce render it advisable that the legal horizon should not be too near nor too sharply defined, so that the maritime law can continue to possess its historic flexibility. In any case the American courts have said that they alone will determine the limits of the admiralty jurisdiction. Concededly Congress has exclusive power to legislate within the known boundaries, and therein its laws are supreme; but it cannot mark the frontier. The general maritime law to which the American admiralty courts look when they seek guidance is not, they have said, the maritime law of any one country, especially not the old maritime law of England, but is the general system existing by mutual consent in all the commercial countries of the world. Yet it has no inherent force of its own in America, where it is operative only in so far as it has been adopted by customs or by law.

The substantive American admiralty law is practically as complete as that of any country. Apart from statutory provisions as to the registry, enrolment, licensing, mortgaging, regulation, inspection, navigation, equipment, seizure and forfeiture of vessels it deals with the greatest variety of maritime contracts. The test of a maritime contract is its nature and subject matter, and the place where the contract is actually made is immaterial. A curious anomaly is represented by the rule that a contract to build a ship is not maritime while a contract to repair a ship is. Typical express maritime contracts are charter parties, which are constituted by the hiring of a vessel by her owners to others; contracts of affreightment, which exist when a vessel is operated by her owners on their own account; demurrage, the carriage of passengers and their baggage; and the carriage of goods, marine insurance, freight, wharfage and towage, the purchase of supplies and repairs and the making of advances therefor, masters' and seamen's wages and bottomry and respondentia, both of which are now almost obsolete. Bottomry is the borrowing of money by a captain in a foreign port upon the security of his ship in order to obtain funds to pay for repairs or other necessaries that he may prosecute the voyage; there is, however, no obligation to repay the borrowed sum if the vessel is lost. Respondentia is a similar borrowing upon the cargo. Contracts implied by law

are the maintenance and cure of sick or injured seamen; pilotage where compelled by statute; salvage, resulting in the saving of vessel or cargo; and general average.

The application of general average is directly traceable to the ancient law of Rhodes. When by deliberately injuring or jettisoning cargo or destroying some part of the vessel, as, for example, cutting down a mast, the crew is able successfully to avoid serious danger to the ship, the property thus saved contributes proportionately to the property injured or destroyed, so that on a general average the loss is equally shared by all interests.

The test of a tort in the American admiralty is one of locality. The tortious act must take effect upon navigable water and possibly (this question is open) it must in some way be connected with the equipment, operation or discipline of a vessel. Typical maritime torts are collision, swell and suction damage, loss of or injury to cargo and personal injury to passengers, crew and stevedores when committed upon maritime waters. It should be noted that the common law doctrine of contributory negligence, which denies relief altogether when this factor is present, is not applicable to maritime torts. The damages are simply calculated in proportion to the degree of fault.

Several other matters do not fall exactly within the category of either contract or tort, as the rights and liabilities of co-owners of a vessel, who in the American admiralty are not regarded as partners but as tenants in common and are liable *in solido* for the debts or torts of the vessel, limitation of liability on the part of the owners of vessels, piracy, the barratry of the master, the discipline of the crew, overloading or unseaworthiness of a vessel and the stranding or wreck of a vessel. Some of these matters are dealt with as crimes.

Apart from statute or the existence of a special duty, such as that of keeping a vessel seaworthy, an injured seaman in the American admiralty was entitled not to damages but only to maintenance and cure. In the case of injuries resulting in death there was no liability at all, the admiralty in this respect following the peculiar rule of the common law. There was some relief, however, under the state statutes abolishing the rule and Congress in 1920 finally abrogated it in admiralty as to death on the high seas. Congress in 1927 also attempted to overcome the effect of the line of Supreme Court decisions limiting the operation of the state compensation acts. Congress provided compensation for death or injury upon navigable waters if suitable recovery might not validly be provided under state law. Seamen were excepted because they preferred to retain their remedies under the maritime law and the Merchant Marine Act of 1920, which allowed them to maintain at their election an action under the Federal Employers' Liability Act applicable to railway employees.

Limitation of liability is one of the most strongly marked general features of the maritime law; serving to encourage maritime commerce it is of venerable age in the continental maritime law, but it is statutory in the American admiralty, as indeed it is in the English Admiralty. In England it goes back to an act of 1734; but the modern law, codified in the Merchant Shipping Act of 1894, rests upon acts of 1854 and 1862. In the United States the law rests upon statutes of 1851 and 1884, under which not merely when a disaster has taken place but after any act, loss or damage which appears to make it advantageous to him to do so a shipowner may limit both his maritime and non-maritime liability to whatever the value of his vessel or its wreckage may be after the occurrence of the act, provided that it occurred without his personal design, fault, privity or neglect. Insurance carried on the vessel need not be surrendered. Thus after the *Titanic* disaster the line operating the vessel limited its entire liability to about $5000, the value of the lifeboats which were rescued. Such a privilege may have been justifiable when maritime disasters were frequent and when vessels were absent from their home ports for years at a time and cables and radios did not exist, but it scarcely seems socially expedient today.

For many years a three-cornered contest had been going on in admiralty between cargo shippers, shipowners and insurers, each trying to shift to the others liability for losses and damage. Bills of lading were drafted to give shipowners the benefit of the cargo shipper's insurance, and then the provisions of insurance policies were altered to prevent such a result. As between the cargo shippers and the shipowners a kind of equilibrium was reached by the passage of the Harter Act in 1893 at the instance of the shipowners. Briefly the act prohibits the shipowner from stipulating contractually to be relieved from the consequences of his own negligence, but if he has used due diligence to equip and man his vessel and to make it seaworthy, then he is relieved from liability for nearly all kinds of damage or loss. The act was substantially

enacted in Australia in 1904, in New Zealand in 1908, in Canada in 1910 and finally in England in 1924 (14 & 15 Geo. 5, c. 22).

It is not surprising that there is a large common element in the maritime law of continental Europe, since it was once based for the most part on the French *Ordonnance* of 1681. Like their mediaeval forbears the compilers of the modern codes of commerce, of which the maritime law usually forms one of the books, have continued to borrow and adapt freely provisions from the codes of other countries. A tendency toward further development has been displayed in South America. The French *Ordonnance* of 1681 inspired the Spanish ordinance of Bilbao of 1737 which, after amplification and improvement, was enacted as the maritime part of the Spanish Code of Commerce in 1829. This in turn strongly influenced the earlier codes of many South American countries. But more originality has since been displayed under Dutch and French influence.

While the Anglo-American maritime law has developed like the common law out of a vast bulk of cases decided in courts integrated with the ordinary judicial structure, with this body of case law augmented or modified occasionally by statutes, in continental Europe and in Latin America quite the opposite has often been true and the maritime law has developed more nearly according to the trend already clearly indicated in the Middle Ages. In many countries the maritime law continues to be administered in special courts of commerce whose jurisdiction is limited by both the nature of the action and the status of the litigant. As in the American federal courts it must then be shown on the threshold of an action that the court of commerce has jurisdiction; otherwise the litigation must be remitted to the ordinary civil courts. From such a situation delays and difficulties naturally arise.

In Europe the result achieved by the Anglo-American maritime lien is reached either by the granting of preferential privileges in payment, as in France, or by the right of a pledge of the vessel which is valid even when it is in the possession of third parties, as in Germany. The scope of these rights is more extensive than in the United States: for example, they further include obligations arising out of the building of a vessel, the salary of the captain, premiums on marine insurance policies and the wages of watchmen in port after the last voyage. Frequently a lien is given for collision damages, and contributory negligence does not wholly bar a recovery: it only reduces the recovery proportionately to the quantum of negligence. Since the continental civil law did not refuse a right of action in case of wrongful death, no difficulty on this score has ever existed in the maritime law.

Seamen, "the wards of admiralty," are specially protected by all countries: the payment of their wages is privileged under all circumstances, their contracts are carefully safeguarded and if injured in the service of the ship they must be maintained and cured at its expense. The benefits of workmen's compensation acts were extended to them in European countries even earlier than in the United States.

In the British dominions a problem somewhat analogous to that precipitated in the United States by the constitutional requirement of "uniformity" in the maritime law has been caused by the Colonial Courts of Admiralty Act, 1890. This not only abolished the older colonial vice admiralty courts and declared that the legislative organ of any dominion might designate any court of unlimited civil jurisdiction as an admiralty court but provided that no greater jurisdiction could be conferred upon such a court than that possessed by the High Court in England. On the other hand, partial autonomy in some matters has been granted by the Merchant Shipping Act of 1894 (57 & 58 Vict., c. 60). The resulting situation has been very confusing. Is the jurisdiction of a dominion court of admiralty fixed at its extent in 1890? Does an extension of jurisdiction by the British Parliament automatically extend to a dominion? The Privy Council has held that it does not. May the dominion parliament then add to existing jurisdiction?

An international problem in maritime jurisdiction has arisen in recent years as a result of the government ownership of merchant ships. The principle of government immunity from suit has been often extended to such ships by decisions privileging them from arrest. The result has been to undermine the effective power of the maritime lien. Because of the sudden growth of government owned or chartered vessels operating in ordinary commercial trade after the World War the decisions have had an unfortunate practical effect, for there has been created a large class of vessels entirely irresponsible in the eyes of the law. The decisions have had their absurd side because each of the principal maritime nations permits itself to be sued in its own courts, at least in admiralty. Even the

American government, while not generally liable for its torts, has declared itself to be fully liable for them in admiralty. But an American whose cause of action arises in Boston harbor against an Italian vessel must seek his remedy in Italy. In the United States this situation could be corrected by a simple statute; no treaty would be necessary. Resolutions in favor of the abolition of state immunity were passed in 1922 by the international conference on maritime law at Brussels and in 1923 by the Gothenburg Conference in Sweden.

There have been many great changes in the conditions of maritime commerce in modern times, but the maritime law has by no means ossified; in some respects the power working for adjustment and a cosmopolitan uniformity today is greater than ever before. Uniform rules to govern general average, known as the York-Antwerp Rules, were worked out at a series of congresses from 1860 to 1890; they have been modified again of recent years. In 1889 an international maritime conference attended by delegates from twenty-seven of the principal maritime nations met at Washington and agreed on Rules of the Road at Sea and other matters. Such international conferences, which have become increasingly frequent, have done much to unify the rules in force in the various maritime nations. Usually the participants in these meetings have been those who are practically concerned with the matters involved, so that to a considerable extent the modern development of the maritime law goes on in accordance with its traditional method.

FREDERIC ROCKWELL SANBORN

See: LAW MERCHANT; COMMERCIAL LAW; MERCHANTMEN, STATUS OF; FREEDOM OF THE SEAS; TERRITORIAL WATERS; PIRACY; PRIZE; MARINE INSURANCE; SHIPPING; SEAMEN; JURISDICTION; COURTS; PROCEDURE, LEGAL; COURTS, COMMERCIAL.

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stance of International Legislation" in *Law Quarterly Review*, vol. xlii (1926) 25–36 and 308–16.

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MARK. *See* VILLAGE COMMUNITY.

MARKET. A market in economic parlance is the area within which the forces of demand and supply converge to establish a single price. It may be viewed geographically as a physical extent of territory, or it may be viewed as a more or less organized group of individuals whose bids and offers disclose the supply and demand situation and thereby establish the price. Popular parlance generally centers on the first view, economic theory on the abstract conception, although the two are frequently commingled.

Geographically the extent of a market may vary from a petty village within which the owners of housing space must find tenants to the markets for wheat, cotton and canceled postage stamps, which cover the civilized world. In general the size of the market for a given commodity is limited by the facilities for transportation. Non-perishable commodities of high value and small bulk cannot vary widely in price from one country to another; commodities, like fresh milk and hay, which are relatively difficult to transport may have only local markets or may have markets of national extent strung along the transportation lines, with isolated local markets in the hinterland. From the point of view of organization the market may vary from the fair, definitely regulated as to time and place, to the highly organized "order" market, such as the modern stock exchange, or the decentralized market of a mass production industry.

The market plays a central role in traditional economic theory. It is indeed the balance wheel of the economic system as viewed by laissez faire economists. Under a regime of private ownership of the means of production and moderately free enterprise prices form the chief instrumentality for coordinating the activities of specialists and allocating to rival claimants the control of existing wealth. The effectiveness with which prices perform this function depends to a great degree on the efficiency of the market organization.

The price making process involves constant readjustment of quoted price to changing facts of supply and demand, and of production and consumption to changing prices. The price, or price structure, which would reflect most accurately the existing state of demand and supply, that is, the price situation which would emerge if no further change occurred in the conditions of supply and demand, is known as the equilibrium price. The core of the laissez faire tradition is the contention that the establishment of this equilibrium price would bring about the best allocation of specific goods and services which is possible in terms of the existing distribution of purchasing power. The perfect market is viewed as one in which there are no obstacles to the determination and establishment of the price which "clears the market"; any other price situation than this means that some individuals are left in possession of goods which they could exchange with one another in ways they would all regard as individually advantageous.

The modernist movement in economic theory has challenged this doctrine not so much in terms of its logical completeness and accuracy as in terms of its adequacy to solve pressing problems of public and private policy. It is necessary therefore to examine the equilibrium concept in some detail.

Two types of equilibrium price must be distinguished. The first is the equilibrium of the market for a limited supply of a commodity which is not being continuously produced for the market in significant volume; such commodities are shares of stock in going concerns, land, antiquities, buildings not of modern type and temporarily the supply of an agricultural product between harvesting seasons. The equilibrium price of such a commodity is expressed not by a single figure but by a pair of quotations, one the highest bid offered by a prospective buyer, the other the lowest offer made by a prospective seller. The width of the spread between the bid and the asked prices is an index of the stability of the existing distribution of ownership. When the bid price rises as high as

the asked price, trade takes place until there are no more holders who are willing to sell at a price as low as the highest bid.

On the other hand, in the case of commodities which are being produced currently and consumed currently the equilibrium situation is not stability of ownership but a steady flow of goods from the ownership of producers to that of consumers. The equilibrium situation is reflected in a single price, not in a pair of quotations.

The classical analysis of the function of the market is much more useful as an explanation of what takes place in the allocation of fixed supplies to potential holders than it is in connection with the more numerous cases where there is need for continuous exchange between producers and consumers. Were it not for the inertia of buyers and sellers, expressed in the spread of bid and asked prices, and the costs of sales a well advertised market situation would effect an ideal distribution of the ownership of these permanent elements in the world's wealth —ideal in the sense that the holders of a given commodity would be those whose valuation of it relative to other commodities was highest.

When it comes to the markets for goods which are in continuous flow from producers through middlemen to consumers, the case is very different. Instead of an allocation of existing goods to those who will pay the most for them the market's function is to keep goods flowing in a steady stream from those who can produce them most cheaply to those who are able and willing to pay the most for them, and in such volume that no would be consumer shall fail to obtain a supply so long as anyone who could afford to produce at this consumer's price remains unemployed. All parties to the market process have a stake in future prices which outweighs their immediate interest in buying or selling the existing supply on the most advantageous terms.

The theory of the perfect market fails to approximate the actual market situation most frequently with regard to the seller's actions, chiefly because production is more highly specialized than consumption. The conflict between the seller's short run interest in clearing the market and his long run interest in "protecting" it constitutes the problem of "price policy," a concept quite foreign to equilibrium economics. Advertising and salesmanship are utilized not merely to facilitate the flow of goods through the market process but to create a different demand situation for the future. Price policy comes into being as soon as the seller attains such a position of control over the flow of goods that the essential question becomes that of the wisdom of forcing his entire supply on the market at any price he can get (of course above its value for his own uses). Whether the monopoly arises from control of the physical sources of supply, as in the case of diamond mines, or merely from the special value of a trade name due to past satisfactory performance or past advertising is immaterial. In either case the seller's market position must be viewed in terms of a series of transactions, and the level at which he is willing to price his wares will be that which promises the highest net return over the life of his business. This will not except by accident be the same as the equilibrium price of a given supply which would result from "perfect" competition. It may be lower—if the producer has decided to build a reputation for cheapness. Some prominent retailers go so far as to meet all competitive price offers on standard goods regardless of cost. More often it is higher, since the gain from a price somewhat above that which yields a maximum number of sales will ordinarily offset the loss from decreased volume. The producer may find it better to waste part of his stock or to suffer temporary or partial unemployment than to educate his customers to the possibility of lower prices. Goods are dumped outside the customary market for any price which can be had or even destroyed rather than allowed to "spoil the market."

Price policy always implies some degree of monopoly, but under modern conditions some degree of monopoly nearly always exists, at least on the side of production. It is becoming very difficult to find any important commodity the price of which is not greatly influenced by the policy of a few large sellers. There may be a great number of competitors, but the small man finds it to his advantage to let the big man make the price. The market comes to be less and less a reflection of the relationship of producers' costs and consumers' desires. Rather it reflects the decisions of a comparatively small number of individuals as to the probable results of one or another policy pursued over a considerable time without much regard to the immediate market situation. The chief exception until recently has been the case of the great agricultural staples which were produced by so large a number of small scattered producers and are of such a highly standardized character that price policy has seemed to be impossible. Throughout the world, however, the tendency in recent years

has been to concentrate in this field too the control of the sellers' price decisions in comparatively few hands—either through cooperatives or through governmental interference.

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See: ECONOMICS; PRICE; VALUE; DEMAND; SUPPLY; COMPETITION; MONOPOLY; LAISSEZ FAIRE; MARKETING; FAIRS; BARTER; AUCTIONS; MARKETS, MUNICIPAL; COMMODITY EXCHANGES; STOCK EXCHANGE; MONEY MARKET; MIDDLEMAN; SPECULATION; ORGANIZATION, ECONOMIC.

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MARKET GARDENING. *See* FRUIT AND VEGETABLE INDUSTRY.

MARKET INFORMATION. *See* CROP AND LIVESTOCK REPORTING; BUSINESS, GOVERNMENT SERVICES FOR.

MARKETING. As an economic concept the term marketing is susceptible of various interpretations. A common but fallacious theory is that it is concerned chiefly if not wholly with finished goods and is the activity of a specialized class of middlemen or that it is limited to adding time, place and possibly possession utilities to completed goods. The marketing process is infinitely more far reaching than the transfer of goods from manufacturers to final consumers. Even considered only in terms of material things it begins much earlier, as early indeed as the first movement of raw materials. Iron ore is marketed to the smelter; billets of pig iron in turn to the foundry; the foundry's product of castings to the automobile manufacturer, who in turn sells cars to dealers, from whom consumers buy.

Marketing is also involved when the day laborer negotiating for a job offers to sell his services. For the marketing of labor there have been set up employment exchanges both public and private, and buyers of labor power have established elaborate mechanisms for its purchase. Similarly, the securing of funds for industrial and, excepting taxes, for governmental uses as well is a marketing process. The use of funds is bought and sold in a variety of markets and by a variety of institutions and persons—commercial banks, investment houses, insurance companies and others. Funds markets, however, should not be confused with the stock exchanges, which are essentially places for buying and selling the used equities in already existing productive enterprises.

Also inadequate is the conception of marketing as the means by which goods are transferred from localities with a surplus to localities having a deficiency. Such a view remarks an obvious but only a secondary fact. It fails to see that it is the existence and organization of marketing activities which cause the so-called surpluses that marketing disperses. Such surpluses are not, except occasionally, accidental; they are intentional. Farmers do not by accident raise thousands of bushels of wheat, large droves of livestock or carloads of fruit. Contractors do not by accident build hotels and apartment houses. Nor do mine operators open by accident extensive veins and then, finding themselves with a surplus, seek to sell what they do not want. People do not become physicians, lawyers, brokers, stenographers, brick masons or aviators unconsciously and then seek to find a market for their laboriously acquired abilities. These surpluses of goods or ability beyond the individuals' desire to consume are built up because those concerned believe that there is a marketing mechanism which will enable them to exchange their products or specialized services for a larger portion of food, clothing and other desirable goods and services than they could obtain by direct production. Such surpluses are but a necessary part of specialized production. It is obvious that financing, an advance of at least sustenance, in monetary form or otherwise is necessary to specialization. Specialization in an institutional setting such as obtains in the western world exists because of marketing devices.

Exchange of goods occurs in the most primitive of societies and trade between nations has flourished throughout history, but under modern capitalism marketing has become not only all pervasive but central to the whole economic system. For marketing to attain this position, certain institutions are prerequisite. The most important are private property—both in goods and in one's own person—freedom of contract and diffusion of property rights. If property rights are highly concentrated there will be little occasion for exchange through marketing; in a slave or strictly communal society, the advan-

tages of specialization will be achieved by some other means.

Given these basic institutions, certain devices are necessary to carry on the specific economic activities which constitute marketing. First there must be devices for accomplishing transfer of ownership. In a developed form this implies a vast system of law and recording. Equally fundamental are mechanisms for price determination. Prices can be determined by the higgling of individual buyers and sellers, but this is usually least costly when aided by such facilities as those provided by commodity exchanges or one-price marketing systems. The price mechanism is itself dependent on the existence of a unit of valuation, making possible a rational appraisal of various costs and their comparison with anticipated selling prices; transport organizes specialization through space. Storage organizes it through time. Basic also to organization of specialization by marketing is widespread information concerning the activities of specialists and concerning the existence of supplies, desires, methods of transport, protection and finance and localities in which trading can be done to advantage. Agencies for fixing standards of quality and for grading represent subsidiary aspects of the information function in the modern marketing system. Finally, a marketing system is dependent upon a proper ideology. It will be greatly restricted in its scope by the prevalence of certain kinds of religious ideas or of strong nationalist or localist feelings.

Marketing activities have been found by anthropologists among primitive peoples everywhere. Exchange among such groups is sometimes ceremonial, sometimes purely economic in nature; and specialized products may be traded in-- through barter--over wide areas. Throughout history there have been few groups so separated from the rest of the world as not to be touched by marketing activities. But marketing as a system of economic relationships appropriate to specialization and diversified private ownership is of course not to be found in social and economic systems based on communal living or on slavery and subsistence from concentrated landownership. The most important type of marketing in the ancient world was that between countries. It was chiefly a trade in luxury goods. Babylon, Crete, Phoenicia, Arabia and to some extent Rome rose to greatness on the movement of trade between peoples (*see* COMMERCE). This trade was facilitated by coinage and by banking machinery, regulated by legislation, supported by treaties, protected by armies and navies, encouraged by the state as a source of income and general prosperity and often aided by official representatives comparable to modern consuls.

Domestic trade was by no means absent from the ancient world. In Athens merchants were classed as wholesalers—usually importers and shipowners—and retailers. The latter operated within single cities, selling their wares in small shops or in booths in the "markets." In the larger cities the sale of particular goods was encouraged by the establishment of special markets. Hawking about the streets was common, and the rudeness of fishwives had already become a proverb. In the days of Athens' greatness middlemen were already regarded as profiteers, and regulations were repeatedly passed to limit their operations.

The trade life of Rome was a vast mixture of the military, the administrative and the more narrowly commercial. But there was keen discernment as to the nature of exchange in the observation that Rome exported legions, lawgivers and the blessed *pax romana* and took in return tribute of the world. Rome was provided with a "wilderness of shops, grocers' stalls, milk dealers, and wine shops." The Forum itself originated as a market place. In Hadrian's day there were two great shopping districts for Romans outside the fora, one for the plebeian trade struggling for bargains and another with the "finest retail shops in the entire world."

Ancient trade operations were, however, meager indeed when compared with modern marketing. While city life necessarily required a marketing organization for supplying food and drink, it was only the more valuable articles which could bear the costs of shipment to a great distance, and up until the industrial revolution marketing touched only lightly the processes of production of the great bulk of goods and services.

While many of the patterns basic to the modern marketing mechanism were cut in antiquity, more were supplied by the growth of trade in northern Europe, particularly its expansion in England following the break up of the manorial system. Under the latter economic life was communal in the sense that the community worked together; and division of the fruits of industry on the manor, villa or great estate was rather by customary regulation than by exchange. Although mediaeval Europe was decidedly noncommercial, yet some marketing activity existed

throughout the period. Important in its organization were the merchants of the Italian cities, whose fleets brought the products of the Orient to the north. At a little later period the Hanseatic League rose to a position of dominance in the trade of the north. Fairs and markets were the chief trading institutions of mediaeval life. The first were periodic or occasional. They were sources for wholesale buyers and outlets for merchants from a distance as well as points for consumer purchase. Their beginning was religious, growing from the assemblies of pious worshipers who congregated around famous shrines on the feast days of saints. The church in giving protection greatly facilitated their development, the market cross becoming the emblem of peace for trade. Within national boundaries a market was usually established by royal grant or under the protection of some religious order. Market towns furnished points where goods purchased from fairs could be distributed or where exchange between country and town could readily take place. Markets like fairs were periodic but more frequent, weekly or semiweekly. Conflicts of market towns as to the proper distance between them—interesting forecast of modern discussions of marketing areas—were numerous. In the larger towns shops and stalls, the machinery of markets, were continuous appurtenances. The peddler was common in the Middle Ages, carrying the wares of craftsmen or fairs to more remote points of sale. Peddler, shopkeeper, merchant, this was the commercial hierarchy, the larger merchants forming in parts of Europe an aristocratic class important in social and political life.

The ideological environment of the Middle Ages, however, was restrictive to marketing. The advantages of specialization were imperfectly realized, and the fallacy was prevalent that the trader took something for nothing. Certain types of trade were prohibited as immoral, the ground being in the case of funds that loaning took advantage of necessity. Prices, particularly for foods, were commonly regulated.

The rise of marketing as the functioning of a series of mechanisms which coordinate economic production, determine its direction and make possible a high degree of specialization is simply illustrated in those changes which took place in the woolen industry in England in the declining days of the guilds and prior to the coming of steam power. The first enclosure movement increased the supply of wool and of labor. With the decline of the guilds England presented an economic setting in which merchant-manufacturers found it possible to purchase wool, to employ in the workman's home or small shop spinners, weavers, dyers and others necessary to specialized cloth production and to sell the product in a market with which these workers had no contact. In such a sale of their specialized activity there was a better living to be gained by the workers than they knew how to obtain otherwise. The merchant became the integrating factor in the entire process of cloth production and sale. A similar transformation was gradually occurring in other industries; for instance, by the middle of the seventeenth century the merchant dominated the silk industry of Lyons; but the change came earliest in England, where all the requisites for sustaining specialized production organized through buying and selling were rapidly coming into existence in the sixteenth century. By the middle of that century it was legal to charge interest for money if the rate was not higher than 10 percent. By 1638 the outlines of a post system provided the basis for rapidly carried information—not only letters but newspapers, the first of which had appeared some seventeen years before. By 1667 insurance against certain risks could be bought from organized companies. Almost as early regular lines of wagoners sold transport. For aid in passing goods on to the consumer, manufacturer-merchants found special dealers quickly arising to offer their services. It was through such changes that there came into western economic life that system of organizing industry which is called the business system. A business system is essentially a marketing system.

Any description of the contemporary system of marketing must of necessity be sketchy because of the amount of material to be covered. In the first place it must consider the methods of marketing of a number of different classes of goods: raw materials, such as ore, coal and timber; semimanufactured goods, such as steel sheets and bars; manufactured parts, such as castings, shapes and bolts; goods, as yet unused, for personal consumption; goods partially consumed, resold for further consumption; and, finally, equipment used in manufacture and distribution, such as power plant and factory machinery and office and store fixtures. Any of these classes of goods may be marketed either from the owner directly to the consumer or to the user for further production; through organized exchanges; through auctions; through cooperative organizations; or from the owner to and

through trading intermediaries, such as wholesalers, retailers, commission men and brokers.

No one of these methods is applied solely to any one class of goods. Certain general correspondences are, however, to be observed. The commodity exchange (*q.v.*) has been most frequently used in the marketing of raw materials, particularly agricultural products. Auctions (*q.v.*), in many ways similar to organized exchanges but typically operated by private companies, function importantly in the wholesale selling of fruits, of wool—particularly in Australia and England—and in the fur trade. Auctions are also important in the resale of partially used articles of many descriptions. Cooperative marketing organizations have developed in the United States chiefly in the sale of agricultural products—citrus fruits, cotton, wool and livestock. In Europe cooperative stores play an important part in almost every field and wholesale cooperatives link producer and retailer. Cooperative retail stores have never become of great significance in the United States, but cooperative buying has in recent years become a prominent aspect of retailer-wholesaler organization, particularly in the grocery and drug fields.

Direct selling is of some importance in both Europe and the United States in the marketing of goods to final consumers but is far more extensively used by manufacturers in selling equipment, semimanufactured goods and parts to other manufacturers and by wholesalers in reaching retail outlets. In all of these cases the salesman typically appears as an intermediary agent of the seller. Direct selling also still plays a considerable role in the marketing of fruits and vegetables in cities, where growers sell to consumers in markets similar in many ways to those of mediaeval days. Not only has peddling not disappeared from the rural and suburban districts, but it is widespread in the house to house sale of widely advertised products.

The trading intermediaries fall into two major classes—wholesalers and retailers. Most changes in the marketing system have come about through the emergence of new types of wholesaler or retailer and in the shifting of their relationships to one another. The wholesale intermediaries fall into two main groups. Certain of them, such as wholesalers and jobbers—not always distinguishable in certain trades—purchase from manufacturers or other producers typically for the purpose of resale to retailers. Others, such as commission men, brokers and manufacturers' agents, acting as independent enterprisers sell goods for manufacturers, refineries, farmers and other producers but do not actually take title to the goods (*see* WHOLESALING).

The chief classes of retailers are independent retailers, chain stores (corporate and voluntary), department stores, mail order houses, and for Europe cooperative retail stores should be added to the list (*see* RETAIL TRADE). The chain store, mail order house and department store are, from the point of view of their buying, wholesalers as well. The term independent retailers is usually employed to designate a retail organization limited to a single unit, commonly located in a residence neighborhood, selling consumer merchandise, usually of one general class, such as groceries or drugs. In the last respect it differs from the independent general store handling the whole range of consumer products from notions to heavy hardware, which was once the common type and which still exists to some extent in rural districts. The outstanding development in the field of the specialized trading middlemen during the past decade has been the growth of the corporate chain store, a series of unit outlets in one or several cities owned and directed from a central office. Outstanding features of chain store development have been the decreasing "service"—delivery and credit—offered and the standardization in equipment and, in large degree, in goods handled. The success of corporate chain stores has led to the development of so-called voluntary chains. The term voluntary chain is applied to a number of types of organizations: cooperative retail groups joined informally for advertising or purchasing; retailer owned wholesale establishments; wholesaler organized and sponsored groups of retailers; and groups of wholesalers or retailers organized by outside agencies.

The department store made its first appearance in Europe and developed in the United States during the latter half of the nineteenth century, until it has become an accepted institution in most cities of any size. Within the past few years chains of department stores have developed, in some cases into enormous organizations. The mail order house began as a store soliciting orders by catalogue and receiving orders by mail, chiefly from small town and country buyers. In recent years the advent of good roads and automobiles has made the possibilities of urban shopping directly competitive to mail order business and has impelled the

larger mail order houses to establish chains of retail outlets within cities. These concerns have therefore become in part chain stores.

The rapid and dramatic growth of chain stores and the increasing number of mergers gave rise, in the period before 1929, to predictions of the ultimate disappearance of the independent merchant. Figures published by the United States Census of Distribution indicate, however, that even in 1929 nearly 21 percent of all persons engaged in wholesaling and retailing in the United States were individual proprietors or members of firms. In certain European countries, particularly in France, the proportion would probably have been considerably higher. Since 1929 it has not only become evident that the independent unit may have definite economic advantages, but there has been a tendency for such advantages to be safeguarded by legislation inimical to the chain groups. The issue is by no means settled. The larger units in the department store and mail order fields, followed by the larger chains, were first to apply advanced methods of accounting control, personnel administration, specialized buying and mechanized operations. Ways have been found, however, to make the advantages of most of these techniques available to smaller enterprises.

Quantitative information as to marketing and the marketing process is extremely sparse and must remain difficult to obtain because of the very complexity of the subject, the vagueness of its delimitation and the rapidity with which conditions in the field change. In the United States every census has included some information on trade occupations, but not until 1930 was a Census of Distribution taken. This is the most complete survey of marketing available for any country. Since 1912 the Harvard Bureau of Business Research has been making studies of distribution costs for particular industries, and in recent years business research organizations in other universities have undertaken similar surveys. The United States Bureau of Foreign and Domestic Commerce also has published a series of distribution cost studies since 1928. In Germany the Ausschuss zur Untersuchung der Erzeugungs- und Absatzbedingungen der deutschen Wirtschaft has been publishing since 1927 a series of studies of German economy, one group of which deals with marketing, and a semi-official organization in Berlin, the Forschungsstelle für den Handel, issues reports on various aspects of marketing. In addition occasional studies have been made by governmental departments in other countries, as, for example, those by the Ministry of Agriculture and Fisheries and the Empire Marketing Board in Great Britain.

From these sources it is possible to construct some kind of picture of the position of marketing in the modern economic system. The United States Census of Distribution for 1930 indicated that, in 1929, 7,716,561 persons, or nearly 16 percent of all those gainfully employed in the United States, were engaged in wholesale and retail trade. Of these 6,020,747 were in retailing, 1,510,607 as proprietors and firm members (not on pay roll), 3,833,581 as full time employees and 676,559 as part time employees. The remaining 1,695,814 persons were engaged in wholesaling, 90,772 as proprietors and firm members (not on pay roll) and 1,605,042 as employees. Comparable figures for earlier years are not available, but a rough measure of the number of persons engaged in marketing is given by Census of Occupations figures. If the census classifications of agriculture, forestry and fishing, extraction of minerals and manufacturing and mechanical industries are grouped as production occupations, and transportation and communication, trade and clerical occupations as distribution occupations, the personnel in distribution or marketing constituted 25 percent of the total for the two groups in 1910, 30 percent in 1920 and 35 percent in 1930. It is to be noted that for the last year this classification indicates that approximately twice as many persons were engaged in distribution as were included in wholesaling and retailing occupations as reported by the Census of Distribution. While exact comparison is impossible, figures for European countries indicate a similar trend toward an increase in the number of persons engaged in marketing activities. Thus the League of Nations, Economic and Financial Section, *International Statistical Year-book, 1929* (Geneva 1930) reports that for Germany in 1907 8.7 percent of the total gainfully employed were engaged in "commerce" and in 1925 11.7 percent; for France in 1911 9.8 percent were engaged in commerce and in 1921 10.4 percent. Later figures, while computed on a different basis and not directly comparable, show a continuation of the same trend.

Another indication of the relative importance of marketing is the total sales involved. The 1930 Census of Distribution reported for 1929 in the United States as a whole 1,543,158 retail stores and 169,702 wholesale establishments.

Annual net sales of retail stores in that year were reported to be $49,114,653,269, and the annual pay roll $5,189,669,960. For wholesale establishments annual net sales for 1929 were $69,291,547,604, and the annual pay roll amounted to $3,010,129,535. The total selling value of goods distributed by manufacturing plants in 1929 was $63,409,200,000.

A rough quantitative analysis of the flow of goods from manufacturers to the several types of consumers is possible also. This table dis-

DISTRIBUTION OF OUTPUT OF MANUFACTURING PLANTS IN THE UNITED STATES, 1929

	Percentage
To industrial consumers	31.3
To manufacturers' own wholesale branches to industrial consumers	5.7
To wholesalers to industrial consumers	7.0
To manufacturers' own wholesale branches to wholesalers to industrial consumers	0.8
Total to industrial consumers	44.8
To home consumers	2.5
To manufacturers' own retail branches to home consumers	1.9
To manufacturers' own wholesale branches to home consumers	0.1
To retailers to home consumers	18.6
To manufacturers' own wholesale branches to retailers to home consumers	6.9
To wholesalers to retailers to home consumers	22.6
To manufacturers' own wholesale branches to wholesalers to retailers to home consumers	2.6
Total to home consumers	55.2

Source: Derived from United States, Bureau of the Census, *Fifteenth Census, 1930; Census of Distribution: Wholesale Distribution* (1933) 33-35.

regards the transactions of such middlemen as brokers and also the sales of wholesalers to other wholesalers and of retailers to other retailers. It is significant that nearly half the goods manufactured are marketed to industrial users.

From certain points of view it is helpful to classify goods sold into, first, those which are marketed through organized exchanges and, second, those which may be said to be marketed administratively. In the first group the purpose of the marketing machinery is to fix a price which will clear the market. It is of this group that value theorists have been chiefly aware. The second group includes those goods upon which a price is fixed by the seller, at least for a considerable period of time, and for which sales efforts are used to clear the market at the fixed price. It is in connection with the second class of goods that the bulk of advertising, although by no means all of it, and other types of so-called high pressure selling are employed. While the organized exchanges are frequently commented upon adversely, the administrative type of marketing has been subject to rather clamorous criticism, particularly in recent years.

The cost of marketing has always aroused some suspicion, but whenever costs of living press hard on the available incomes of a large proportion of the population this suspicion is intensified. Since the World War the widening spread in almost every country between indices of wholesale prices and the indices of costs of living has been regarded as tangible evidence of undue distribution costs. Although much has been said in recent years even in official circles of the wastes and increasing costs of marketing, statistical evidence is almost unavailable. The most conscientious efforts to compare present with past marketing costs are balked by the fact that valid series of data are meager and that rapidly advancing technology and swiftly changing standards of materials, styles and services of retailers make what is purchased even under the same name extremely variable from year to year. While they show nothing as to trends in marketing costs, the most complete figures of distributing expense, those of the United States Census of Distribution, showed the costs of retailing to be 24.83 percent of total sales and those of wholesaling to be 8.85 percent of sales. Perhaps more significant are figures for limited classes of business. The Harvard Bureau of Business Research has compiled a record of operating expenses of department stores for twelve consecutive years; according to these studies operating expenses in terms of percentage of sales show an increase from 25.9 percent in 1920 to 34.5 percent, 35.9 percent and 36.0 percent for stores with a turnover of less than $500,000, from $500,000 to $2,000,000 and $2,000,000 or over respectively, in 1931 (*Bulletin*, no. 33, 1922, and no. 88, 1932). A somewhat similar study of German department store costs made by the Ausschuss (III, 9, vol. i, p. 207) shows a similar trend. Average costs expressed in percentage of volume of sales increased from 24.7 in 1913 to 27.2 in 1926 for stores with yearly sales of over 10,000,000 marks and from 16.6 percent in 1913 to 19.9 percent in 1926 for stores with yearly sales of under 250,000 marks (the largest and smallest groups reported).

All such figures, however, must be viewed with caution and analyzed with care. As a measure of efficiency, costs expressed as a percentage

of selling price may be deceptive when applied to a series of years, since changes in the value of the dollar may not be reflected identically in selling prices and in costs. Increases of advertising expenditure may indicate an added cost or the utilization of a form of hawking more economical than personal selling. So too the multiplication of persons in mercantile activities may be interpreted entirely in terms of increased marketing costs, or may be viewed as evidence of the intensification of specialization. The former interpretation, if used without further evidence, is analogous to the assertion that the coming of the railroads, which added thousands of middlemen, was an uneconomical development.

Administrative marketing methods may be criticized further in that they constitute tools by means of which those financially interested strive to cut the patterns of culture. That they so strive and to a degree succeed is certain. Whether this is bad or good is less certain. It is part of that freedom of expression in political, religious and economic life which is regarded by some as among the chief triumphs of modern civilization. In terms of the present mores one may say of economic persuasion that like political and religious persuasion it should be controlled to the extent that those interested in its control can control it. Short of violence, they are largely limited to the means which it itself employs. A general criticism of marketing is a criticism of the business system of which it is not only the spirit but most of the body.

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See: MARKET; WHOLESALING; RETAIL TRADE; COMMERCE; INTERNATIONAL TRADE; AGRICULTURAL MARKETING; BARTER; GUILDS; MARKETS, MUNICIPAL; AUCTIONS; FAIRS; COMMODITY EXCHANGES; STOCK EXCHANGE; BROKER; STORAGE; WAREHOUSING; GRADING; FOOD INDUSTRIES; MERCANTILE CREDIT; RETAIL CREDIT; INSTALMENT SELLING; MIDDLEMAN; SALESMANSHIP; ADVERTISING; STANDARDIZATION; SPECIALIZATION; PRICE DISCRIMINATION; RESALE PRICE MAINTENANCE; BUSINESS, GOVERNMENT SERVICES FOR.

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MARKETS, MUNICIPAL. Modern city markets have several important functions besides the obvious one of bringing sellers and buyers together. These functions operate largely in the field of food distribution, for most modern American and European markets concern themselves only incidentally with other products. A market or a series of markets in any city today is likely to be merely one of many local agencies for supplying foods. But it is a distinctive agency. In the aggregate it deals with relatively large quantities and with many buyers and sellers who are thus brought into contact. If it is a municipal market some of its expenses are met by the city; if it is a private market the charges to the individual dealer or stand holder are likely to be less than the overhead of a dealer who occupies his own quarters.

Once a municipal market is firmly established it can reasonably be expected to render certain definite services. First, prevailing prices, as far as consumers and producers are concerned, are likely to reflect the saving made possible through free selling space or low rent for stall and equipment, through possible reductions in overhead expense and through the elimination of some handling, intermediate selling and transportation costs. Second, the market is in a position to offer customers a larger, fresher and more varied assortment of products than can the average private establishment. Third, it provides local truck farmers and fruit growers with a satisfactory outlet for their miscellaneous products and therefore helps in the development of a neighborhood food supply. Fourth, it can give consumers increased protection with regard to quality, weight and measure because of the practicability of closer official inspection. Finally, it is better able to give to customers who pay cash and who carry home their purchases a full dollar's worth of products for every dollar they spend.

Some large markets perform other functions. If dealers are allowed to rent stalls they often sell to hucksters, who carry the wares into residence districts and dispose of odd lots of perishables at reduced prices while selling their usual foods. In this way temporary surpluses of perishables can be absorbed more readily than through stores. Perhaps of even greater significance is the fact that large markets, whether retail or wholesale, act as price indicating agencies for their localities. Because of the large number of buyers and sellers who meet here very early in the day the potential supplies and demands are made known and prices tend to reach an adjusting level, which is reflected to some degree throughout the town.

There are many kinds of markets in the United States. Several logical classifications might be made: those which are publicly or privately operated; those which sell at wholesale or at retail; those which are residential or terminal; or those located in buildings or in open market places. Again, they may be classified by commodities, such as fruit and vegetable markets or livestock markets. Whichever classification is adopted, however, modifications are bound to exist. A community may possess a municipal wholesale market and a privately owned retail market; or it may give partial support to both wholesale and retail markets at separate points or in combination; or one of its markets may be open and another enclosed or both may be open markets or enclosed.

Because of the varying degrees of civic support the term public markets is increasingly used to designate all markets of a generally public character regardless of exact ownership. There has been no census of public or municipal markets since 1918. The figures in that report, covering only cities with a population of over 30,000, showed 237 municipal markets in 128 cities. The majority of these markets were of the open type, including some without sheds, and provided 17,578 stands primarily for farmers. Enclosed markets, on the other hand, provided a total of 7512 dealers' stands. The total value of municipal market property was reported as being $28,000,000 while the aggregate funded or floating debt of municipalities chargeable to their public markets was $7,000,000. Strictly municipal markets are evidently decreasing in number, but there are no statistics to prove that the total number of markets enjoying some public support is declining.

The nature of this public support and the administrative agencies in charge vary. A city may own and manage a building fully equipped with stands to be used free by farmers. Again, it may own the building and equipment, renting stands to farmers and perhaps to dealers. Or a city may own the building and lease it to a market company, which then leases the stands to producers and perhaps to dealers. Finally, a city or county may permit the free use of a curb site by farm families and perhaps by dealers. There are still other arrangements, but in practically all of them both the municipalities and the farmers play the chief roles except in these few cases where a non-profit organization, like a county farm bureau or a chamber of commerce, contributes the management, space or building. Some of the very small markets in more or less rural areas are perhaps among the most useful and successful, if measured by the need for the service rendered to both farm families and consumers. Many municipal markets refuse to allow dealers to do business within their space, but other municipal market directors support the practise. These directors lease to dealers and encourage sales to grocers, hucksters and other retailers on the ground that the handling of this greater volume and the wider distribution thus obtained will make the market a more valuable agent for the provisioning of the city.

The result has been that the primitive market

place once used only for simple barter between farmers and housewives has now, in some instances, become a great combination wholesale and retail market, sometimes even possessing railroad terminal facilities and fish wharf adjuncts. A small grower may still sell at a stand occupied by three generations of his family direct to a housewife whose family may have bought at that stand over a similar length of time. In another part of the plant large wholesale transactions may take place, through a commission merchant, between a distant large scale shipper and another large dealer; or the merchant may break up the shipment and sell it to a dozen buyers—retailers and hucksters from uptown; or the merchant may sell half the shipment and place the other half in a cold storage warehouse maintained by the market to be sold at a later date. Such developments were more or less inevitable as growing cities demanded more and more food at the same time that they were pushing the farming areas farther from the town center. Meanwhile new and far distant farming lands were coming into use, with modern systems of refrigeration and warm and cold storage to make possible the year around use of many once seasonal products.

Since early times market places have played an important part in the life of society. The first markets in England and on the continent were of feudal origin and many have continued in private hands, as in the case of Covent Garden in London. It was not until the nineteenth century that municipalities or governments began to participate. Large European markets have been famous points in their respective cities. Besides being the chief provisioning agencies they have been centers of trade, communication, information and recreation for a wide area. Many are still vital organisms, although their traditions are centuries old. The market building (the Halles) at Bruges is one of the oldest and most interesting of that ancient city; its leaning tower is famous throughout Europe and its carillon still stirs the sleepy atmosphere each quarter hour of the day. Other famous markets of Europe include Billingsgate and Smithfield in London, the Halles Centrales in Paris, the Central-Markthalle in Berlin and the markets in Liverpool, Manchester, Lyons, Vienna and Budapest.

Some old American markets are equally well known. The French Market of New Orleans, now somewhat modernized, is a landmark of the old south. Center Market in Washington, D. C., planned for by George Washington, was operated until its removal in 1931 to make way for improvements in the Mall. During the last few years it was under the supervision of the United States Department of Agriculture and did an annual gross business of $10,000,000. Washington and Fulton markets in New York City, Wallabout Market in Brooklyn, New York, Lexington Market in Baltimore and Faneuil Hall Market in Boston are other such centers which have for years been intimately linked with the lives of their communities.

Because public markets had once been a necessity it was inevitable that they should gain a firm place in the American economic scheme. As the United States became increasingly industrialized and urbanized, the faults of a marketing machinery which had not kept pace with the new developments became more and more evident. Particularly did the problem come to the fore after the turn of the twentieth century. In addition the very considerable concern over the possibilities of a failing food supply and the high cost of living in large cities turned the attention of publicists, civic groups and governmental agencies to the devising of schemes for the furtherance of marketing improvement. Congress took early action when it authorized the Department of Agriculture to launch a marketing program; many cities and citizens' organizations made local investigations and presented schemes to help in the reduction of food costs and to improve local marketing conditions. It was natural that the improvement and the extension of the public market should play a prominent part in all these proposals. The Department of Agriculture through its new Bureau of Markets adopted what turned out to be the most realistic approach, for it viewed the city market as merely one important link in a long chain of marketing operations. With a view toward reducing costs and eliminating waste it therefore planned its program to begin with the preparation for market of the farm products and studied all elements of the different channels through which these commodities passed to the consumers. At the end of some of these channels was the city market. Accordingly methods, layouts, expenses and the business of city markets were inquired into; changes were proposed where individual requests for aid were made; and an adjustable model ordinance for the establishment and regulation of markets was prepared. Moreover the department aided in the 1918 census of the country's municipal markets. As a result of these

activities of the Bureau of Markets a series of services including standardization, grading, market news and inspection was developed gradually, which succeeded in turning light on previously obscure marketing procedures and transactions and helped to effect salutary changes. In recent times as a result of these improvements in the mechanics of distribution truck and dairy farmers have become less dependent upon local outlets, while the consumer is assured of an adequate and reliable food supply.

The city markets nevertheless have been among the chief sufferers from this reform in marketing technique. Despite the value of the public retail market for food distribution its relative importance in the United States has been declining. The development of stores in residential districts with delivery and other services struck a serious blow at many of these institutions. Particularly the chain store organizations with their machinery for obtaining and handling perishables and with the aid of economical group advertising have succeeded in effecting a revolution in the retail distribution of foodstuffs. Moreover well nigh insuperable difficulties have appeared to hinder the operation of farmers' stalls, which had earlier been the mainstay of the municipal markets. Farmers conducting such stalls have found themselves at a disadvantage in selling to dealers because of their lack of organization. The rapidly increasing value of land in urban communities has hindered the expansion of municipal residential marketing projects. Growing street congestion is another factor which prevents the local farmer from personally exploiting the nearby market. The almost universal use of the automobile in America has encouraged the development of roadside stalls where the housewife may make her purchases either during the family excursions into the country or perhaps more frequently. Finally, the irregular and seasonal nature of local food receipts, the changing dietary habits and greater emphasis on the consumption of fresh foods have compelled produce merchants and commission men to forge links with the whole world in an effort to provide a steady food supply. More and more therefore those who studied the economic and social aspects of the relationship between agriculture and the city populations saw the market place as but one element in a complicated pattern. In addition the appearance of agricultural surpluses rather than deficits in the western world in the post-war period and, in the United States at any rate, the declining significance of the food expenditure in the average family budget as a result of increases in real wages caused reformers and civic bodies to be less insistent concerning the spread of municipal markets, particularly of the residential, retail and farmer types.

In Europe, where conditions and habits have changed less quickly and loyalties to established institutions are strong, the public markets still handle more nearly the same proportion of the local food supply and remain the center of considerable government and municipal attention. Also many large European markets now receive foods from all parts of the world and are developing transportation and other services to meet expanding conditions. The Halles Centrales of Paris is an example of this type of European municipal market. The market proper covers ten acres in the heart of the city some two or three miles from the connections over which most of its products arrive. Pavilions divided into sections are devoted to the marketing of fruits and vegetables, meats, fish, poultry, dairy products and flowers. Each section is subdivided into wholesale and retail parts, although the wholesale merchant will sell any of his commodities in units of one package. The municipality keeps close check on each merchant's turnover, and space is granted to another or locations are changed as volumes of business change. Each merchant who occupies municipal space is required to be a French citizen of good repute, to deposit a guaranty fund with the municipality and to file a duplicate copy of all account sales. Rent is based on volume of goods sold. No merchant is allowed to conduct both a buying and a selling business; he must sell solely on commission and he may not make financial or other advances to growers in soliciting consignments. Most of the produce comes in shipments direct from growers, usually a few packages of one fruit and a few of another. As there is no standardization of packages, the commission merchant must account for many kinds of packages when dealing in one commodity. Refrigerator space is owned by the market and rented to the lessees.

According to a report from the United States consulate in Paris the fees derived by the municipality in 1931 from the wholesale section of this market approximated $537,000; rental of parking space brought about $72,000; refrigerating space brought approximately $10,190; and a total of about $43,000 was derived from other sources within the market. Fees amounting to

about $157,000 were collected by the city from the retail markets in the Halles. The expenses of the city in connection with the running of the Halles in 1931 were estimated to be about $400,000 exclusive of repairs, depreciation and insurance on the buildings. The Paris police department administers the market and the records are open to the public. A grower or shipper may search the police records for any given day and compare the accounts of his sales with those filed as well as with those for the rest of the market. If discrepancies or infractions of the regulations are found, the commission merchant may have his guaranty funds confiscated and in addition lose his space.

Spaces for retailing are reserved in some of the pavilions, but retail trade is declining in the Halles. The farmers' market elsewhere in Paris, connected with a wholesale trade in meats, fish and dairy products, is one of the busiest markets in the world. A large wholesale business has developed on private property adjacent to the Halles, where requirements are not so exacting. The commission firms which do the largest business are here in their own buildings. They buy, sell and make advances to growers at will. One of these firms has three large wholesale stores in different parts of the market and employs a sales force of about fifty men and women. Each salesperson is allotted floor space to sell one or more growers' consignments, receives a commission of 1½ percent of his sales and retains his own goodwill with a certain clientele. In effect therefore these salespersons constitute a group of small commission merchants under the auspices of one firm. The firm provides the premises, the accounting and the finances and maintains a field organization to obtain consignments.

The degree and character of the management of the municipal markets of the United States vary widely. The typical large municipal market is likely to have an equipped building and a manager, usually called the market master, who rents the stalls, refrigerator space and other facilities at prices which supposedly cover actual operating expenses. The manager also as a rule employs a small clerical and mechanical staff and a number of inspectors and is responsible for the enforcement of the market regulations, the collection of rentals and the maintenance of the plant. It is his function to cooperate with the local health authorities on questions of sanitation and with the city agency in charge of weights and measures. Sometimes municipal markets provide checking facilities and less often parking space and opportunities for group advertising. Delivery service is seldom furnished and price control is rarely attempted, although the typical market expects to guarantee reasonable satisfaction to customers. Figures for a few municipal markets may be illuminating. That in Rochester, New York, which cost approximately $233,000, has had in recent years an average annual operation revenue of $46,494 against an average annual operating expense of $14,264. The market in Syracuse, New York, which cost $380,000, has had an average annual operating revenue of $34,404 against an average annual operating expense of $14,250. Market revenue more than covers the operation and maintenance of the three municipal farmers' markets in Detroit, including also expenses of the administrative bureau, but the market system is not self-sustaining if the interest on investment in land and buildings and depreciation are taken into consideration. It should be noted also that charges for light, water and police protection are not included in the maintenance budget. In this city no effort has been made to raise stall rentals high enough to cover these charges, as the municipal council considers the public markets of real social value to the city and the surrounding producers.

A notable development of fairly recent years has been the wholesale terminal produce market. With its elaborate network of railroad team tracks, shedded platforms for display, sale and truck delivery, cold storage facilities and auction rooms the terminal market seems destined to occupy a large and secure place in the distribution process. The functions it performs are many: it is in a position to facilitate the efficient reception of the necessary huge volume of perishable food supplies of the modern city; it makes feasible the early release of refrigerator and other cars and the prompt distribution of receipts to wholesalers, large retail dealers and storage houses; it is able to encourage direct carload shipments from growers and shippers; it helps to reduce the appalling crosshauls, rehandlings, wastes and delays which have become such an outstanding characteristic of intra-urban transportation.

These terminal markets vary in character. Most of them are privately owned, as, for example, those in Detroit, Boston, Philadelphia, Cleveland and Buffalo; the Bronx Terminal Market in New York City is, however, a municipal enterprise. Many of the privately owned

terminal markets are the property of railways. Some terminal markets are of the platform type, notably those in Boston, Philadelphia and Detroit, where the contents of cars are unloaded and displayed on the platforms in much the same manner as at auctions; others are divided into series of individual stores, as in Chicago and Cleveland. All these terminal enterprises are large properties and some conduct a very sizable business. In Boston, for instance, the terminal market handles 25,000 carloads of foodstuffs annually; in Philadelphia one plant covering nearly forty acres and representing an investment of $12,000,000 handles about 32,000 carloads each year, while another covering twenty-three acres and representing an investment of $7,500,000 receives some 16,000 carloads. It is interesting that despite their recent origin these two Philadelphia markets already distribute approximately 95 percent of the foodstuffs entering the city by rail. On the other hand, New York City's municipally owned terminal market in the Bronx despite a very elaborate plant, which cost the city almost $20,000,000, has not yet taken any significant place in the distribution of the city's food supplies.

Detroit possesses a union terminal market to which all cars carrying perishables on any railroad can be switched. An operating company composed of car lot receivers leases the terminal from the railroad financing company which built it, and rebates revenues over expenses annually to all receivers operating in the terminal. The company charges the car lot receivers a flat rate per car for unloading and for displaying on the package platforms and for placing cars and showing samples at the highly perishable as well as bulk yard delivery platforms. Fruit auction facilities are also provided. Sales are made chiefly to wholesalers, but anyone who buys the stipulated minimum quantity is free to purchase. The Detroit Union Produce Terminal, as it is called, now represents an investment of between $5,000,000 and $6,000,000 and handles about 30,000 cars a year.

CAROLINE B. SHERMAN

See: FOOD INDUSTRIES, section on FOOD DISTRIBUTION; FOOD SUPPLY; MARKET; MARKETING; AGRICULTURAL MARKETING; GOVERNMENT OWNERSHIP; TERMINALS; FAIRS.

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MARKOVIĆ, SVETOZAR (1846–75), Serbian journalist, labor leader and politician. After completing his course in a technical school in Belgrade Marković continued his studies in St. Petersburg. Here he became familiar with the Russian socialist and revolutionary currents and was especially influenced by the writings of Chernyshevsky. He then continued his technical education in Zurich, where he moved in the circles of the revolutionary émigrés and became familiar with the works of Marx and Lassalle. Upon his return to Serbia he devoted himself to the popularization of socialist doctrines in his own country. Since Serbia was chiefly an agrarian country, Marković believed the ideas of Chernyshevsky were more applicable than those of Marxian socialism. He compared the Serbian zadruga to the Russian mir and held that the conversion of the whole land into one zadruga would bring about a communist society without the intermediate stages of capitalist economy and violent class war. Marković elaborated these views in his *Načela narodne ekonomije* (Principles of national economy, Novisad 1875) and in "Socijalizam ili društveno pitanje" (Socialism and the social question, in *Rad*, vol. i, 1874). He also published several radical opposition newspapers, for which he suffered persecution and imprisonment. The bureaucratic system he bitterly denounced as an expensive and oppressive administration, excluding the people from public affairs and impoverishing it; he attacked the liberal party for compromising on the 1869 constitution and on the sovereign's dominance over

the Assembly, for being concerned solely with political matters and for remaining a party of the intelligentsia. He criticized the romanticism, nationalism and absence of social program of the United Serbian Youth and was an advocate of municipal and district autonomy, sovereignty of the National Assembly and municipal ownership and cultivation of land; he also hoped for the eventual creation of a federated Balkan state. Some of these ideas, like municipal landownership, proved utopian, while others found adherents in all classes. Marković organized several labor unions and working men's associations as well as consumers' and producers' cooperatives and laid the foundation of the first popular party in Serbia. Under his influence greater attention was paid to economic questions, realism came to dominate in literature, interest in natural science grew and the intelligentsia came into closer contact and cooperation with the masses. Although he died at the age of twenty-nine he exerted a more powerful influence on the social and political currents in Serbia than any other individual before or after him.

DRAGOLJUB JOVANOVIĆ

Works: *Celokupna dela Svetozar Marković* (Collected works), 8 vols. (Belgrade 1888–93).

Consult: Jovanović, S., *Svetozar Marković* (2nd ed. Belgrade 1920); Skerlić, J., *Svetozar Marković* (2nd ed. Belgrade 1922); Wendel, H., *Aus dem südslawischen Risorgimento* (Gotha 1921) p. 135–65, and *Aus der Welt der Südslawen* (Berlin 1926) p. 205–10.

MARLO, KARL (Karl Georg Winkelblech) (1810–65), German economist. Marlo was professor of technological chemistry in Cassel. Impressed by the problem of poverty in the course of a journey through Norway in 1843, he decided to study economics and the social question. Between 1848 and 1859 he published as a series of pamphlets three volumes on economics. A fourth appeared posthumously after A. E. F. Schäffle had in 1870 first drawn attention to Marlo's works in his *Kapitalismus und Sozialismus* (2nd ed. Tübingen 1878).

Marlo belonged to the school of juridical as distinguished from scientific socialism, finding in the principle of right the propelling force of production and the means of securing universal welfare. He saw the elimination of poverty as a problem not of distribution but of production, to the solution of which the existing order (monopolism) in which right is founded on might is an obstacle. Accepting the French revolutionary principle of the rights of man (including the right to labor and its fruits), which he regarded as a Christian doctrine, he criticized as abstract the ideals of freedom and equality. The former, he argued, leads through economic liberalism to plutocratic tyranny and oppression of the workers; the latter through the leveling regime of communism to privileges for the lazy and consequent social poverty.

An organic system (federalism) is needed to secure to the weak the right to exist and to the able the right to work. To this end society must own the means of production and industrial production must therefore be a corporate enterprise. Choice of occupations as well as the use of the fruits of labor and the means of enjoyment must be based on individual preferences and abilities. Thus harmony will be established between justice and production. More concerned than Malthus with the problem of population, Marlo advocated not only moral but legislative restraints. Characteristically he advocated that every married couple be obliged to acquire shares in the productive associations.

Marlo provided German artisans and journeymen, who were pressed on the one hand by landowners and on the other by rising capitalists, with a rationale of their needs. At their congresses in Hamburg in June, 1848, and in Frankfort in July and August, 1848, he rendered practical aid and formulated a program which attacked economic liberalism and called for a reformed guild system. It demanded the establishment of a federation of guilds, guild councils and an economically constituted parliament, wider suffrage, compulsory primary and free vocational schools, a twelve-hour day, a minimum wage, sick benefits, a graduated income tax, a tariff on manufactured goods, land reform and land settlement aid.

RODOLFO MONDOLFO

Works: *Untersuchungen über die Organisation der Arbeit, oder System der Weltökonomie*, 3 vols. (Cassel 1848–59; 2nd ed., 4 vols., Tübingen 1884–86); *Über Maasssysteme und Geld* (Cassel 1855); *Aus Karl Georg Winkelblechs literarischem Nachlass*, ed. by W. E. Biermann (Leipsic 1911).

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MARQUARDT, KARL JOACHIM (1812–82), German historian. Marquardt studied theology, archaeology and classical philology under

Schleiermacher, Böckh and Gottfried Hermann at the universities of Leipsic and Berlin and taught in *Gymnasien* in Berlin, Danzig, Posen and Gotha. It was particularly through the influence of Böckh that he early devoted himself to research in the history of antiquity. In his more mature period he was influenced by the historical and epigraphic methods of Theodor Mommsen.

Marquardt represented the type of the industrious student and great teacher of the middle of the nineteenth century. Wise in his limitations and one of the greatest scholars of his age, he became one of the leading historians of Roman political and private life, its administrative organization and economic system. Marquardt's first work, *Cyzicus und sein Gebiet* (Berlin 1836), presented a composite picture of Cyzicene territory, history, cults, festivals and literary figures, based on a study of all the available inscriptions, coins and written records. He published several other studies on sources of Roman history and various aspects of Roman social life, but his most important work was in connection with the completion of the *Handbuch der römischen Alterthümer* (7 vols., Leipsic 1871–82; 2nd ed. 1876–86), which had been started by W. A. Becker in 1843. In this work Marquardt collaborated with Mommsen and later with several younger scholars. While Becker's original purpose had been to give unity and coherence to the widely ramified material of Roman antiquities, Marquardt's aim was more ambitious. He separated the study of the state from that of private life and divided the material regarding the former into three parts. The first part, prepared by Mommsen, deals with the organs of government and the state power. The second, dealing with the administrative organization of the Roman Empire, was prepared by Marquardt himself; in this study, which remains indispensable, his extraordinary knowledge of facts, his critical mind and his ability to deal with difficult data are revealed at their best. The third part, dealing with the separate branches of administration, finance, army and religion, was later reworked by Dessau, Domaszewski and Wissowa. In two other sections of the *Handbuch* Marquardt treated Roman private life, consideration of which he regarded as indispensable, since even the most trivial manifestations of everyday life often reveal the deep rooted causes of events.

WILHELM WEBER

Consult: Ehwald, Rudolf, *Gedächtnisrede auf Joachim Marquardt* (Gotha 1883).

MARRIAGE. Human mating differs from the sex indulgence of other species in that it is morally appraised according to norms distinctive of each society. Marriage denotes those unequivocally sanctioned unions which persist beyond sensual satisfaction and thus come to underlie family life. It is therefore not coextensive with sex life, which embraces matings of inferior status in the social scheme of values. A realistic analysis does not confound theory and actuality in sex behavior, nor does it derive conjugal life from the sexual drive, which can often be amply gratified outside of wedlock. To merge the two concepts is to forego insight into the distinctively human element of the phenomena.

Society everywhere limits the choice of partners biologically possible. The rule prescribing marriage within one's own group is called endogamy; insistence on marriage outside of one's group, exogamy. Endogamy flourishes in stratified societies and is illustrated in the royal marriages of modern Europe and in the prevalent inbreeding of its aristocracies. The equivalent condition occurs in class conscious savage communities. Among the Masai of east Africa blacksmiths are pariahs; hence no Masai of good standing marries into a blacksmith's family. In Ruanda in the Belgian Congo herders, peasants and hunters represent racially, economically and socially distinct castes and intermarriage is therefore disapproved. As in Europe the restriction of choice to one's peers produces unions of kindred in the upper ranks. In Hawaii, Peru and ancient Egypt a ruler, being the scion of divine lineage, could properly mate only with his own sister; these instances, however, represent a flouting of an almost universal law against marriage between siblings or between parent and child.

Beyond the narrow incest group there are wide differences as to forbidden degrees. Tribes organized into clans commonly tabu marriage not only among all relatives on that parental side which determines clan affiliation but also with fellow members not related by blood. Similarly, the suspicion that residents of the same village might conceivably be related leads in northern California to local exogamy irrespective of genealogically ascertained kinship. Transgressions of such rules resting on legal fiction may be punished as capital crimes, as in Australia, or merely ridiculed and vituperated, as among the Crow Indians. On the other hand, even close relatives so far as they fall outside the immediate incest

group and the clan frequently figure as preferential mates.

Cousin marriage is especially widespread but usually follows a definite pattern. Union with the child of a father's brother or of a mother's sister, that is, with the parallel cousin, is extremely rare, the former being best authenticated for the Arabs. But marriage between cross cousins—with the child of a father's sister or of a mother's brother—occurs in parts of Australia, Africa, Melanesia, Asia and America. This arrangement may be symmetrical, without discrimination as to which of the two types of cross cousin is married, or asymmetrical, if the mother's brother's child is preferred to the exclusion of the father's sister's child, and vice versa. Some Australian tribes bar all first cousins but prescribe marriage between certain types of second cousins. Tribesmen in Australia are ranged in kinship categories, unions being fixed between pairs of these classes, individual members of which are coupled by elders.

Sometimes there is a sentiment against marriage outside of one's age group, but matrimonial claims on women of a lower or higher generation are common. A Tlingit of British Columbia may properly choose his brother's daughter; a Navaho of Arizona or a Rukuyenn of French Guiana who weds a widow may also marry her daughter by a previous husband. The principles of substitution for a deceased spouse serve in part to illustrate the point. The most widespread of these laws operate within the generation: a brother inherits the widow (the levirate) and a sister succeeds to the dead wife's status (the sororate). But in Africa a son sometimes falls heir to his father's wives with the sole exception of his mother—a custom paralleled among the Caribs in South America; and in matrilineal communities the uterine nephew sometimes assumes his deceased maternal uncle's marital position, as in Melanesia and among the Haida of British Columbia. By an easy extension of the levirate-sororate principle a man lays claim to the wife's brother's daughter or his wife's father's sister, as among the Omaha. In polygynous societies simultaneous marriage with a woman and such kinswomen of hers are orthodox. A significant arrangement occurred among the now extinct Tupis of the Brazilian coast; a man had a preemptive claim to his sister's daughter, and by surrendering this girl her father was partly absolved from the services a husband must render his wife's kin. Instances of this category are so numerous that cousin marriages have been plausibly regarded as secondary consequences of a primary coupling of avuncular with nepotic kindred, as in British Columbia and Melanesia and among the Miwok of California.

Exogamy and endogamy may coexist with reference to different units. The Todas of India are divided into endogamous halves, each of which comprises a number of exogamous clans. The Australians were long credited with exogamous clans and moieties, but Radcliffe-Brown has shown that the aborigines of most tribes are primarily concerned with the positive prescription of certain preferential unions rather than with the outlawry of intraclan marriage. The exogamous clan rule would thus figure as an incidental rather than as a primary consideration. For reasons of expediency most marriages occur within the political or local unit. But unless there is a positive tendency so to restrict them the term endogamy is pointless.

Rules like the foregoing are not the dictates of caprice. Marriage until the most recent period has never been primarily directed toward the sentimental gratification of the spouses, a notion that is even now limited to a small section of the population of several occidental countries. The human norm is more nearly represented by two wealthy European peasants on friendly terms with each other and desiring to consolidate their estates. The dowries and settlements that figure in the realistic fiction of eighteenth and nineteenth century literature reflect a similar psychology, and the arrangement of royal marriages even in contemporary times is in complete conformity with this point of view. As Tylor indicated, savage matrimony is preponderantly a means for cementing group alliances between families or clans according to the social organization. Hence arises the principle of sibling equivalence which finds expression in the sororate and the levirate; the bond once created is not allowed to snap but an attempt is made to perpetuate it by appropriate substitutions. Hence also the resentment found among the Navaho when a widower fails to take his second mate from among his wife's kin, and the strengthening of the alliance by the permission of polygynous marriage with two or more sisters or clanswomen. Infant betrothal results from the same motive.

If these quasi-political considerations are supplemented with others of a strictly economic nature as well as a desire for offspring, most matrimonial arrangements are accounted for. In

simpler conditions a wife is normally not a liability but an asset. In some circumstances, as in the arctic, she becomes a necessity, since no adult male can persistently depend upon his kinswoman for the performance of certain indispensable tasks. There is everywhere a sexual division of labor by which the conventional standards of living are guaranteed to each family. In Queensland the husband provides fish and large game, while the wife supplies shellfish, seeds and wild fruits. In this cooperative labor on behalf of the common household Radcliffe-Brown sees the function of matrimony throughout Australia: ". . . this aspect of marriage, *i.e.*, its relation to subsistence, is of greatly more importance than the fact that man and wife are sexual partners . . . sexual relations between a man and a woman do not constitute marriage in Australia any more than they do in our own society." Similarly, in New Guinea a Kai need not marry for sexual pleasure, which he can easily secure without assuming responsibilities; but he must marry in order to have somebody who will make his pots and nets, weed his plantations and cook his meals, in return for which he builds the hut and provides game and fish. Where women are no longer economically productive, a dowry may take the place of the bride price in order to make household management possible. This institution flourished in ancient Attica as in modern France and is per se no more degrading to womanhood than are bride purchase and polygyny.

Since a girl in ruder societies represents economic value, her family surrenders her only for an equivalent. By a simple arrangement two families with a son and a daughter in each can exchange the girls, as in west Australia and New Guinea. A different line of development leads to bride service, which figures prominently in the Old Testament. A suitor is often chosen for his skill as a provider and at least temporarily performs the functions of a hired man, as among the Hidatsa of North Dakota. Such duties terminate among some peoples, as among the Makusi of Guiana, with the birth of a child. Lifelong service is attested for the Tupis of Brazil; here the husband fought for his brothers-in-law, carried their provisions on a journey, supplied their larder, built their dwellings and felled trees to make a clearing. But characteristically these tasks were lightened if he gave his daughter to one of her maternal uncles who asserted a preemptive claim to her person. A relationship of this order involves matrilocal residence at least in the sense that the husband must live in the village if not in the house of the wife's kin. But Tupi society permitted significant modifications of this pattern. A young man of wealthy family might satisfy all claims by supererogatory gifts and thereby effect an independent establishment which was patrilocal. A wife captured in warfare necessarily followed her husband to his home.

More typically, patrilocal residence results from bride purchase. A northwest Californian took his wife to his own village if he had fully indemnified her family; otherwise he was condemned to matrilocal residence with concomitant loss of prestige. The term bride purchase must be used with caution. In many North American tribes the contracting families exchange gifts of nearly equal value, which merely solemnize the procedure and constitute a mutual expression of good will. Such balancing of dowry and bride price cannot be treated as purchase at all. Even where there is no return gift, however, purchase may imply acquisition of widely varying rights. A Kai of New Guinea becomes master of his wife's sex life, is entitled to punish her for adultery and claims restoration of the price in case of elopement. But he does not secure either control of her property or of her children, who belong to her kin. In direct contrast stands the principle widely found in Africa by which a man purchases offspring in addition to his wife's economic services. He claims as his legal progeny not only children begotten by himself but the issue of avowedly adulterous cohabitation, and in case of barrenness he is entitled to restitution of his payments. The logical rigor of African thought in the matter is well exemplified by the Lango of the Upper Nile. Here full fledged matrimonial status is not recognized before the birth of a child. Until then the woman is designated as a bride, not as a wife, and is obliged to live with the groom in the bachelors' hut, returning to her mother for the period of confinement. Only after the birth of a child is an essential part of the compensation rendered to the mother-in-law—that part designed as a starting point for the payment which the bride's younger brother will have to make for his bride. Should the woman desert her husband, he has redress by claiming either the original bride price or the bride's brother's children; in the absence of issue he is theoretically empowered to appropriate the brother's wife. Even outright purchase need not degrade a woman to the condition of a chattel that can be

sold at will to the next bidder; and instead of being derogatory to her position purchase may be positively honorific. Thus among the Crows of Montana for a woman to be bought is *prima facie* evidence of the good character she bears for virtue and skill.

Whether a woman is or is not capable of owning property depends on other considerations than the mere fact of her having been bought. Effective use and the creator's title to the product of his labor are principles sufficiently strong in primitive life to preclude the operation of finespun legalistic casuistry. Although a west African woman is her husband's property, the cotton she raises is hers and need not be supplied to her husband without compensation; a North or South American Indian will not dispose of his wife's basketry or pottery without her consent. Feminine disabilities may be better interpreted from another angle. The reason for the fact that women may not own livestock among pastoral nomads may lie in the early dissociation of women from domestication of the larger species of animals. Crystallized into a fixed tradition this negative correlation would bar women from occupation with livestock and hence would militate against their owning and inheriting stock. Such relative novices in herding as the Chukchi permit a woman to take a man's place with the herds and quite logically also admit her to relevant property rights.

As between husband and wife the distribution of property rights is relatively simple in the ruder societies; such simplicity is characteristic also of rules of inheritance. The same division of labor which establishes distinctive rights for each partner largely determines the allotment of goods on a spouse's demise. A man will inherit a father's, a maternal uncle's or a brother's possessions; a woman, her mother's, her aunt's or a sister's. A wife rarely inherits a husband's property, nor does he inherit the wife's property, for according to a widespread primitive belief spouses form a temporary alliance with a pooling of interests; death dissolves the partnership, and the property held by either reverts to his or her kindred.

The natural sex ratio never departs considerably from a one to one relationship—for example, the disparity observed in Prussia in the period beginning in 1875 merely vacillates between 100 to 105.9 and 100 to 108.6 in favor of boys—hence on an equitable allotment of mates monogamy would seem to follow. Among some peoples, however, cultural factors intervene in favor of plural marriage. Among warlike tribes the male population is artificially reduced, and among people like the Eskimo the strenuous hunting life tends to have the same effect. On the other hand, female infanticide, prompted sometimes by the rigors of existence, sometimes by obscure motives, effects the reverse result. Old men or chiefs may arrogate to themselves an unfair proportion of the women, and where wives are bought the well to do are similarly favored. The ancient Egyptians permitted bigamy at all periods and in all ranks of society, but only kings and grandees kept harems. In Uganda, where men were liable to death not only in warfare but also in wholesale sacrificial offerings, the women far outnumbered the men, yet peasants were for the most part monogamous and seldom had more than three wives.

Monogamy thus prevails mainly in simpler societies which are democratically organized and free from conditions which alter the natural sex ratio; under more complex conditions it is the lot of the lower classes. In southeast Africa the number of wives becomes an index of social position. Because of their economic labors a husband with ten mates controls more millet than his neighbors and therefore can make more lavish display of hospitality. A man does not require more and more wives in order to have a sufficiency of food or primarily to transmute their produce into tangible goods; his aim is to secure added prestige. The inevitable result of African bride purchase and exaggerated polygyny on the part of influential elders is the condemnation to celibacy of the poorer males, who must wait until the levirate or filial or nepotic widow inheritance provides a wife. Actually they often engage in intrigues with the married women.

Polygyny is scarcely anywhere due to masculine concupiscence. On this point evidence from several areas is mutually corroborative. The prominent men among the Tupis kept several wives for domestic and horticultural labor as well as for prestige. The first wife often tried by every means to pass on some of her chores to additional wives, whose position in relation to her was that of maidservants. A similar situation is found among the Kai in New Guinea and the east African Kikuyu. Polygyny may be stimulated also by the first wife's sterility and by mandatory inheritance of an elder kinsman's widow. In the latter case the woman may be too old for physical cohabitation, so that she devotes herself wholly to the usual feminine tasks; if

incapacitated she becomes a liability. Altogether there is nothing derogatory to womanhood or intrinsically difficult in savage polygyny. Jealousy occurs on the whole but rarely, and it arises rather because of slights to offspring than from sexual passion. In the Lobi region of west Africa the judicial records of fifteen years show barely a half a dozen cases of violence among co-wives.

One determinant of polygyny is the prolonged period of lactation characteristic of many peoples, which may extend to the child's third and even fourth year. This is sometimes coupled with a strict tabu against cohabitation prior to weaning, as among the Lango, a restriction which without polygyny would prove intolerable. Matrilocal residence when established as a permanent condition militates against polygyny except of the sororal variety. The Hopi, for example, are monogamous; among them desire for change of partners has not led to simultaneous marriage with a woman and her sister, regarded as orthodox elsewhere but which their ideology forbids, although rational grounds for the prohibition are not evident. Instead monogamy is unstable, the husband readily divorcing himself and taking up his abode with another family.

Polyandry is best known from the Todas, among whom female infanticide underlies the institution. If the several husbands are brothers, all without discrimination are held fathers of all the children. Unrelated fellow husbands take turns in the exercise of marital rights, and one of them establishes fatherhood by a rite. Unless this is duplicated by one of his associates, the performer remains legal father of all the wife's issue; so that a man dead for years may figure as the legal parent of a newborn infant, who later falls heir to a share in his estate.

Several husbands sharing several wives on equal terms without differential ties uniting any one couple would constitute group marriage. Such sexual communism does not exist in reality. The best authenticated instances are from the Chukchi of Siberia and the Australians about Lake Eyre. Among the latter, however, no woman is ever the affianced wife of more than one man; and the husband enjoys an unchallenged preemptive right over her. Accordingly group marriage here simply denotes the right of concubinage conferred by a council of elders on individuals belonging to the categories from which husbands are properly chosen and the custom does not abrogate the individual bond between duly betrothed spouses. Similarly, Chukchi marriage is individual, being only sporadically tempered by an ephemeral exchange of sexual prerogatives with fellow contractors, the motive being to obtain bed mates during sojourns in a strange camp.

Still less can prenuptial license be confounded with group marriage. As practised in the Trobriands of New Guinea and among the east African Masai it is regularly followed by the establishment of individual marriage ties. Promiscuity in the sense of an indulgence unchecked by any inhibitions is not practised even by the young people of these tribes, since incestuous copulation is barred. A Masai bachelor is not permitted to have sexual relations with a kinswoman living in the same district and he may not have intercourse with his affianced bride before marriage.

Premarital indulgence must not be considered a universal feature of the savage state. In many cases virtue is exacted of girls at least in the upper rank, as in the case of princesses in British Columbia or Samoa. But even where great freedom is allowed before marriage, the double standard usually supervenes in wedlock. In Christian societies compulsory monogamy has not been construed as exclusive cohabitation for the male partner. The code of the *Siete partidas* of thirteenth century Spain expressly legalizes concubinage, and to the austere Protestant ethics of Samuel Johnson a husband's affairs were merely lapses from saintliness in the sight of God; socially they were petty derelictions which a sensible wife would ignore. This one-sided latitudinarianism obtained until the recent rise of feminism, although here and there both sexes took advantage of the laxity condoned by usage, as in the polite circles of eighteenth century Europe.

In savage tribes adultery may be punished by a severe drubbing. In Bantu Africa proprietary rights had to be satisfied by indemnification, while a correspondingly offended wife had no redress against either her spouse or his mistresses. Yet the husband who resents spontaneous intrigues on his wife's part may voluntarily offer her to a guest in token of hospitality, and wife exchange is a common Eskimo practise. Specific circumstances also bring about transfer of sexual privileges. Thus the purchase of membership rights in certain Plains Indian organizations involved the ceremonial surrender of a wife to the seller; and in some circumstances a Crow husband had to submit to the abduction of his wife by a former lover. Among the Masai

a man abandoned his wife and hut to a visiting fellow member of his age grade.

General looseness need not preclude a lofty ideal of feminine chastity, such as is found, for example, among the Yukaghirs of Siberia and the Crows. Some of the honorific ceremonial performances of the latter might devolve only on an absolutely blameless married woman. Quite generally marriage illustrates a constant clash of ideals and practise. Patriarchal peoples like the Chinese and Australians are not lacking in cuckolds and henpecked husbands; and while a Crow gentleman is in honor bound to show no concern over the kidnaping of his wife, many are unable to live up to this standard of serenity.

Primitive weddings are largely secular, although occasionally a magico-religious element enters the formal conclusion of the bond. For example, among the Reindeer Chukchi a reindeer is slaughtered and both bride and groom are smeared with its blood; the young woman daubs the sledges with blood, feeds the sacred objects of the household with reindeer marrow and sprinkles the fireplace with the sacrificial blood. In more sophisticated societies religious features may assume prominence. Thus prior to a west Tibetan wedding several of the groom's friends ride to the bride's house but are not admitted to the family estate until they have established their affiliation with the proper religious fraternity; they must submit to being catechized as to the pre-Buddhistic faith of the country and are scourged for any mistakes. The father of the Athenian bride sacrificed a lamb, of whose flesh all present partook; they likewise shared a flat cake mixed with honey. In ancient Rome too the oldest type of patrician marriage bore a sacramental character; the sacred *far* cake was partaken of by bride and groom in the presence of the supreme ecclesiastical functionaries of the state. German peasants preserve a similar custom, a couple eating from one bowl and drinking from one glass. Purely secular weddings can assume a solemn character. The exchange of gifts by the contracting families is often conducted with great ceremony, and symbolic performances may be essential. Sometimes a spectacular capture of the bride, who pretends coyness and is aided by her friends or kindred, holds the center of the stage. Such features were formerly interpreted as survivals of a hypothetical condition in which wives were always captured by force. But such seizure is everywhere of subsidiary importance, since the overwhelming majority of primitive marriages either occur within the same local group or are regulated by formal contract between the members of two groups. Accordingly the theory has yielded to less far fetched views. The sham resistance and fighting may merely symbolize the act of appropriation, as Hobhouse suggested, or the psychic inhibitions real and feigned which accompany the abrupt transition to a novel status, as E. C. Parsons and Thurnwald contend. In consonance with this view cases of coyness among prospective grooms have been demonstrated from Greece, Albania, the Caucasus, India, Assam and Melanesia.

Among primitive peoples marriage, being as a rule considered a civil contract, can be readily dissolved. Where a wife has been bought the husband is legally at an advantage; on the other hand, under pronounced matrilocal conditions, as among the Hopi of Arizona, the woman is favored and may simply divorce her husband by setting his belongings outside her mother's house. But such correlations, significant as they are, must not be allowed to obscure the basic realities. The presence of children in all societies acts as a deterrent irrespective of legal prerogatives; and self-interest operates in the same direction. Islam may permit a Siberian Turk to dismiss his wife at will; but since he has painfully accumulated the many head of cattle exacted by her family as the bride price he will not lightly exercise his theoretical privilege. Similarly, a Crow may publicly proclaim his divorce as a gesture of bravado, but he is not likely to cast off a virtuous, hard working mate for whom he has paid several horses. In New Guinea even a wife's elopement does not precipitate a desire to send her packing: having purchased her services the husband claims either her person or the price paid for her, and her kin recognize the obligation to indemnify him. In ancient Athens a husband was allowed to divorce his wife but he hesitated in view of the obligation to return the dowry with heavy interest. A common cause for divorce everywhere is sterility; but where polygyny is practicable, a second wife may be taken instead.

Although the sentimental aspects of marriage have been grossly exaggerated, it would be erroneous to deny them. Prolonged companionship and participation in parental duties may engender genuine affection among savages far transcending a merely erotic interest. In special cases this rises to a truly romantic attachment, incontrovertibly attested by mythological variants of the Orpheus theme among the Menom-

inee and Blackfeet. It is of course, as among civilized peoples, the exceptional experience of poetically gifted individuals. As barrenness exposed a wife to contempt and divorce, being at times, as among the Lango, more severely regarded than the most extravagant debauchery, so fecundity generally enhanced her status in the family not only in primitive societies but also in ancient Palestine and Egypt, where even a maidservant gained prestige by bearing children for the master.

Economic factors determine the character of marriage, but they are never the sole determinants of social phenomena. Throughout equatorial South America and the adjoining Brazilian littoral there prevails the identical aboriginal system of horticulture supplemented by the chase and fishing. As Kirchhoff has shown, whatever trivial variations occur in the intensiveness of these coexisting activities they cannot account for the observed social differences. Specifically, woman's contribution to economic values nowhere suffices to place her on a higher plane; and contrariwise, as in polite European society, parasitism is not degrading and fails to bar her from domestic and public influence. According to Schmidt and Thurnwald woman became dominant through the invention and practise of horticulture, but matriarchal tendencies were subsequently overthrown. Schmidt holds that the motive for this revolution was partly man's resentment of his abject condition —a hypothesis which departs from economic principles of explanation. Thurnwald more consistently invokes the effects of pastoral nomadism: men as stock breeders were able to buy wives and thus created patriarchal institutions, although these need not have been so degrading in reality as the juridical consequences would logically suggest. This does not, however, explain how patriarchal tendencies could arise in the New World, where pastoral nomadism was non-existent. Apart from this the theory in either form fails to account for vital facts. Hopi women, who add little to the larder, own the houses. Tonga women neither till the fields nor even cook, but they enjoy a comparatively high place in society. In Melanesia women, who often do the major part of the farming, are rigidly excluded from ceremonial and public life. Some herders admit women to the cattle enclosures, while others disqualify them from milking and tending stock. Even such related Turkish nomads as the Altaians and the Kirghiz differ in the sexual allotment of duties. The Altaian woman's legal status is not a jot better and her actual lot is much harder despite the fact that she assumes virtually all economic tasks except the milking of mares and the chopping of firewood. Such evidence leads to the conclusion that the position of women is invariably codetermined by ideological considerations, which may largely override those of an economic order.

Marriage and its correlate, the family, are throughout their history shot through with prudential motives that overlap and at times apparently swamp all others. But in reality these motives never eliminate ideological postulates that are overlooked precisely because they are too fundamental to require explicit formulation, while the economic provisions incidental to matrimony must be overtly stated. Closer scrutiny invariably discloses ethical and sentimental norms.

Thus, biologically, girls can marry at puberty; primitive peoples proceed on the fact as an axiom and practise adolescence rituals largely as an advertisement of nubility. By contrast, in the United States in 1930 only 1.3 percent of the girls were married at fifteen and at twenty-one 54.8 percent still remained single. The economic factor does not determine the difference, for as elsewhere the adolescents might be married to men from twenty to thirty years older, who would be engaged in gainful occupations. Even if such disparity were regarded as repugnant, the parents might shoulder the economic responsibility, as they did formerly. Postponement is not motivated by the desire to insure a livelihood but to insure it in arbitrarily assumed conditions of an ideological order, such as independence of parental aid and psychological companionship of mates. The spread of contraceptive knowledge has, however, tended to stimulate earlier marriage.

In a survey of the modern developments and contemporary trends of matrimonial institutions the theories of the intellectual class that writes history must be distinguished from the practises of the masses of men who make it; and one must guard against devoting disproportionate attention to the usages of polite society. Until the industrial revolution the overwhelming majority of Europeans were illiterate peasants only remotely affected by the sophistications of the genteel. Their mores had been shaped in pagan days and, sincere votaries as they doubtless were of Christianity, the new dispensation modified their culture pattern only slightly; it was not a basically creative force.

Disregarding local variations, the conditions preserved until quite recently in rural Poland may be considered typical of Europe and they present in all essentials the picture outlined for the primitive peasantry of other continents. All normal individuals are expected to marry; the marriage arrangements are dictated by the interests of the group precisely as in aboriginal Australia or America. Every family seeks the most advantageous alliance; every wedded individual gains new status, outwardly symbolized by the prerogative of being addressed in the plural. The free play of sexual attraction in the choice of a mate is narrowly circumscribed by the principle of social acceptability. A precipitate falling in love leading directly to engagement is psychologically almost impossible, for a dominant endogamous principle demands the rough equivalence of the groom's and the bride's economic and social position. But no more than elsewhere can the attitude of the human actors be reduced merely to an economic background. A dowry is essential not because the groom requires a contribution for effective husbandry, but because both families are intent on maintaining their social level. The groom must supply acreage not because living would otherwise be impossible for the young couple, but because matrilocal residence in Poland as in aboriginal northwestern California involves loss of dignity. On economical grounds the only son of a wealthy farmer might well wed without thought of dowry, but his family demand it as a symbol of their own importance and solidarity. Contrariwise, an heiress would humble herself by marrying a poor youth: it suggests lack of proper suitors, hence some personal deficiency.

As Thomas and Znaniecki have shown, such ideology breaks down with the disintegration of the social unit in which it had its origin. The Polish seasonal emigrant to Prussia when isolated from his group loses awe of its tabus; the immigrant in America separated from the members of his family is no longer subject to their control. Untrammeled by the old group standards an individual can find sex expression outside of marriage and married persons can obtain release with impunity, which was impossible in the old country.

The emergence of individualism observable among Polish immigrants is characteristic of every country affected by the industrial revolution. Urbanization generally involves the severance of the individual from the group into which he was born and his removal from its surveillance with a concomitant weakening of its standards. This is facilitated by his encountering new ideologies, such as the positivism of natural science and the doctrines of militant socialism, influences which lay the axe to the root of such concepts as the divine institution of marriage, the sacramental character of the wedding ceremony, the mystical, hence indissoluble, bond of husband and wife and the justification of sex relations only in terms of progeny. When these revolutionary ideas gain a following among a large body of city dwellers, their ramifications may come to affect the residual peasantry as well.

The factors underlying contemporary developments are singularly intricate; it is consequently easier to gain an insight into the configuration of the family of primitive tribes or of classical antiquity than to gain a true picture of the family life in any modern civilized country. The pertinent fact seems established, however, that the birth rate has declined appreciably since 1880 and that this decline may plausibly be linked with the spread of neo-Malthusian doctrines. These are deprecated most vigorously by the Roman Catholic church; the deterrent effect of the teachings of the church against contraceptive measures is revealed by Beveridge's comparative statistics, which show that in the Catholic countries of Ireland, Italy and Austria the number of legitimate births in 1911 was 98.8, 91.1 and 89 percent respectively of what it was in 1881, while for the Protestant countries Prussia, England and Wales and Saxony the equivalent percentages were 74.7, 68.4, 57.3. That these disparities cannot be attributed to the relatively larger rural population in the Catholic countries is shown by the fact that in 1928 the birth rate per 1000 of the population in Protestant capitals (Berlin, 10.2; Stockholm, 10.9; London, 16.2) is also lower than that of the Catholic capitals (Madrid, 25.9; Rome, 25.9). The Catholic birth rate is, however, no longer everywhere unequivocally higher than that of other denominations. Apart from religious factors determining the birth rate the contraceptive knowledge readily accessible to the professional and affluent strata has resulted in their becoming less fecund than less favored elements of the population. But this "differential fertility" is probably transient rather than permanent. The latest data for Stockholm, where the disparity was marked in 1911, show poorer and wealthier districts reproducing at the same low rate in 1927; a zero correlation in legitimate births is reported for 1929 between fertility and social

status from Berlin, the capital with the lowest birth rate. As Hogben has declared: "Such data are suggestive of a general decline of the population of Europe in the near future. They do not support the view that differential fertility is more than a passing phase in the history of western civilisation."

On the other hand, Japanese practise is still shaped by the traditional policy, which persists in the face of progressive industrialization. This survival of an anti-individualistic psychology should not, however, be set against modern European usage as though the latter represented repudiation of parenthood, for limitation of offspring is often dictated by the desire to secure greater advantages for such children as are produced. Moreover the ethically gratifying picture often drawn of the large and happy family unit before its disintegration by the machine age is largely mythical. Benjamin Franklin's sober report of his childhood demonstrates, for example, the difficulties of attaining a close emotional bond between the members of a large family and reveals the veritable hatred that is bred by the proximity of psychological aliens related by blood.

Notwithstanding religious and social radicalism marriage in the United States increased by 5.25 percent in 1930 over 1890 (60.55 against 55.3 percent of the population fifteen years and over). In Germany the same age grades in 1885 showed 54 percent of the men and 50.1 percent of the women married, against 55.5 and 53.1 in 1910. A comparison of the decade 1891 to 1900 with the year 1925 shows that the marriage rate has held its own in Italy, has gained slightly in Holland, Denmark and Sweden and considerably in France, has receded in England, Austria, Switzerland and Norway. The fact that knowledge of contraception fails to prevent marriage must be attributed to the prestige value still assigned to social sanctions of the traditional type.

It may be safely predicted then that the future of marriage will be shaped not merely by utilitarianism but largely on the basis of regnant ideologies. A long distance survey of civilization proves that any normative trend, however dominant for a time, may be wholly superseded by another trend. A reversal of present attitudes as to marriage is wholly conceivable; whether or not it shall occur depends on the potency of appeals involving the older ideologies.

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See: SOCIAL ORGANIZATION; FAMILY; KINSHIP; INTERMARRIAGE; FAMILY LAW; SEX ETHICS; COMMON LAW MARRIAGE; COMPANIONATE MARRIAGE; CONCUBINAGE; FREE LOVE; WOMAN, POSITION IN SOCIETY; DOWRY; MARITAL PROPERTY; BIRTH CONTROL; INFANTICIDE; POPULATION; DIVORCE; DOMESTIC RELATIONS COURTS; ALIMONY; COURTSHIP; ABDUCTION; CHASTITY; CELIBACY; BREACH OF MARRIAGE PROMISE; INCEST; ILLEGITIMACY; CULTURE; ANTHROPOLOGY.

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MARSCHALL VON BIEBERSTEIN, BARON ADOLF (1842–1912), German statesman and diplomatist. Educated at Heidelberg in the law, Marschall entered the administrative service of his native province of Baden, served as a member of the Baden upper chamber from 1875 to 1883 and became Baden's representative in the Bundesrat at Berlin in 1883. In 1890 he entered the German Foreign Office, succeeding Herbert Bismarck as secretary of state for foreign affairs during the chancellorships of Caprivi and Hohenlohe. Here he distinguished himself by his juristic knowledge as well as by his strong advocacy of a navy and a vigorous foreign policy. His extraordinarily successful ambassadorship to Turkey from 1897 to 1912 coincided with the new interest taken by Germany and especially by the young emperor, William II, in the Near East and in the development of German economic and political influence at Constantinople and throughout the sultan's wide dominions. Soon after his arrival on the Bosporus Marschall won the esteem of all European residents at the Turkish capital by securing the banishment of one of the sultan's relatives, who had been levying blackmail freely upon foreigners. He accompanied Emperor William II on his spectacular trip to the Holy Land and used his influence to secure favorable concessions from the sultan for the building of the Bagdad Railway, the later construction of which he did much to further. He stood in close and friendly relations with Abdul-Hamid and consequently enjoyed a larger influence at Constantinople than the rest of the diplomatic corps. On account of his experience and ability Marschall was selected as Germany's chief delegate to the Second Hague Peace Conference in 1907, and in 1912 shortly before his death he was withdrawn from Constantinople to be sent as ambassador to England.

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Consult: Pears, Edwin, *Forty Years in Constantinople* (London 1916) ch. xv; Earle, E. M., *Turkey, the Great Powers, and the Bagdad Railway* (New York 1923); Fraser, Lovat, "The Baron and His Baghdad Railway" in *National Review*, vol. lix (1912) 606–19. For his dispatches and other papers see Germany, Auswärtiges Amt., *Die grosse Politik der europäischen Kabinette, 1871–1914*, 40 vols. (Berlin 1922–27), especially vols. vii–xiv, xvii–xix, xxii–xxiii, xxv–xxvii, xxx–xxxi.

MARSHALL, ALFRED (1842–1924), English economist. Marshall, born in Clapham, was designed for the ministry by his father, a cashier in the Bank of England and a strict evangelical. But the boy developed a passion for mathematics and with resolution beyond his years declined a scholarship at Oxford, borrowed money from an uncle, won an "exhibition" in St. John's College, Cambridge, and justified his course by becoming second wrangler in 1865.

Elected to a fellowship in his college, Marshall expected to work on molecular physics. His outlook was changed "by the sudden rise of a deep interest in the philosophical foundation of knowledge, especially in relation to theology." The controversy between J. S. Mill and Dean Mansel concerning the intellectual basis of Christianity was then agitating the English universities. Mansel's defense of orthodoxy, said Marshall, "showed me how much there was to be defended." Membership in a discussion club which included Henry Sidgwick, W. K. Clifford and F. D. Maurice fed this new interest. Without a grievous struggle Marshall became an agnostic. The *Origin of Species* and Herbert Spencer's *First Principles* gave him a new faith—evolutionary progress. Yet like Spencer and his Cambridge circle he continued to think of human behavior as did the utilitarians. Desire to read Kant ("the only man I ever worshipped") in the original led to Germany and contacts with German economists. Questioning "the justification of the existing condition of society" he turned to Mill's *Political Economy* and "got much excited about it." He supplemented his reading by visiting city slums, "looking at the faces of the poorest people." Presently he resolved to make as thorough a study as he could of economics. Appointment to a special lectureship in moral science at St. John's College in 1868 enabled him to follow this new plan.

Thus Marshall came to economics through ethics, bringing with him a curious assortment of qualities— the zeal of an evangelical moralist, faith in evolutionary progress, the ethical criteria and the psychological outlook of a latter day utilitarian, the gifts and the technique of a mathematician. At first the dazzling possibilities of applying mathematics to economics dominated his work. He "translated as many as possible of Ricardo's reasonings into mathematics, and endeavored to make them more general." In so doing Marshall developed the diagrammatic method and hit upon marginal analysis before Jevons' *Theory of Political Economy* appeared in 1871. By 1873 he had nearly completed his papers on *The Pure Theory of Foreign Trade* and *The Pure Theory of Domestic Values* (privately printed, 1879; reprinted, London School of Eco-

nomics and Political Science, Scarce Tracts, no. 1, London 1930). In 1875 he visited the United States, traveling extensively and making a special study of protectionism in a new country. In collaboration with Mary Paley, a lecturer at Newnham College, whom he married in 1877, he made the realistic studies embodied in *Economics of Industry* (London 1879, 2nd ed. 1881). Even in these early years Marshall was striving to combine abstract analysis with close observation of contemporary life and with researches in historical development.

Marriage involved the loss of his fellowship. To get a living Marshall went to Bristol as principal of University College. But administration and money raising were uncongenial and overstrained his health. He resigned his principalship in 1881, spent a year recuperating in Italy, returned to Bristol as a professor in 1882, passed on to Balliol College, Oxford, in 1883 as a fellow and lecturer and on Fawcett's death went back to Cambridge in 1885 as professor of political economy. This post he held until his retirement in 1908; he continued to live at Cambridge until his death.

Marshall's position as the foremost British economist of the time was established in 1890 by the publication of his *Principles of Economics* (8th ed. London 1920). The book is built around a discussion of the "general relations of demand, supply and value." This ground plan enabled Marshall to treat utility analysis and cost analysis as coordinate instead of rival factors in determining values and to treat the problems of distribution as a series of special cases under his general value theory. He applied his scheme alike to an individual's adjustments of sacrifices and satisfactions and to the adaptations of a vast population in producing, distributing and consuming their national dividend; to problems involving varying degrees of competition and monopoly; to temporary market equilibria; to periods permitting an increase of supply through fresh production; and to periods long enough for changes to occur in the supply of the factors of production. A comparison of the framework of Marshall's *Principles* with that of Mill's *Principles* shows a great advance in the integration of economic theory. Detailed knowledge of earlier work is required to find the points at which Marshall unobtrusively fitted into the new pattern his own discoveries.

The symmetry of this pattern did not betray Marshall into thinking that his results were definitive. Economic theory, he held, "is not a body of concrete truths but an engine for the discovery of concrete truths." While he believed that "qualitative analysis has done the greater part of its work," he recognized that the "higher and more difficult task" of "quantitative analysis" has scarcely been begun. Yet beginnings there are in his own work; he was an eager consumer of statistics, and statistical concepts play a larger role in his reasoning than the text declares.

Marshall was profoundly concerned with the problems of human "progress"—so much so that his readers may not realize "the essentially static character of his equilibrium theory," which he "was a little disposed sometimes to camouflage . . . with many wise and penetrating *obiter dicta* on dynamical problems" (Keynes, J. M., *Treatise on Money*, 2 vols., New York 1930, vol. ii, p. 406–07). These obiter dicta flow from the notion of an evolving human nature, as the static equilibrium theory flows from utilitarian conceptions. To Marshall economic conduct is controlled by motives which can be classified as satisfactions and sacrifices if not as pleasures and pains, and the force of motives can be measured in money. But to him man is also a creature of habits which show cumulative changes. Thus his technical analysis smacks of Bentham; his hope for the future of Darwin. Perhaps he thought that Spencer had really reconciled the two conceptions of behavior.

Throughout his life Marshall was hesitant about committing his theories to print. The doctrines in the *Principles* had been familiar to his students for many years before the book appeared. He was working out his monetary views as early as 1875, but his first serious contributions to the literature of the subject were answers to a questionnaire issued by the Royal Commission on the Depression of Trade and Industry in 1886. Not a little of Marshall's best work first appeared in a similar form. From 1891 to 1894 he was a member of the Royal Commission on Labour and he played a large part in the drafting of the final report, especially the sections dealing with trade unions, the minimum wage and irregularity of employment. His evidence before other commissions and the memoranda he prepared for governmental use have been published under the title *Official Papers by Alfred Marshall* (ed. by J. M. Keynes, London 1926).

The first five editions of the *Principles* were marked Volume I. Volume II never appeared. Marshall explained in the sixth edition: "I had

laid my plan on too large a scale." In place of a continuation he produced *Industry and Trade* in 1919 (4th ed. London 1923) and *Money, Credit and Commerce* in 1923. The first book is primarily historical and descriptive, dealing with the evolution of modern industrial and business organization. The second, finished in Marshall's eightieth year, is "mainly pieced together from earlier fragments, some of them written fifty years before." He was struggling to put together one more volume, to be called *Progress: Its Economic Conditions*, when overtaken by his last illness.

Marshall was not only the most influential economic theorist of his day but also a great teacher. He trained generations of ardent students, who in turn have trained a large proportion of the active economists in the British Empire and elsewhere. To many of his contemporaries it seemed that Marshall had solved the most fundamental problem of economic theory by demonstrating the mutual relations of cost, utility and value; that he had secured economics against psychological and ethical criticism by basing his analysis upon money measures of the force of motives, which remain valid on any interpretation of the motives themselves; and that his "engine for discovery" can be applied to whatever new problems economics may encounter in the future.

WESLEY C. MITCHELL

Consult: Memorials of Alfred Marshall, ed. by A. C. Pigou (London 1925), containing in addition to reprints of some of Marshall's articles and letters a bibliography of his writings and biographical essays; Keynes, J. M., "Alfred Marshall 1842–1924" in *Economic Journal*, vol. xxxiv (1924) 311–72; Taussig, F. W., "Alfred Marshall" in *Quarterly Journal of Economics*, vol. xxxix (1924–25) 1–14; Parsons, Talcott, "Wants and Activities in Marshall," and "Economics and Sociology: Marshall in Relation to the Thought of His Time" in *Quarterly Journal of Economics*, vol. xlvi (1931–32) 101–40 and 316–47.

MARSHALL, JOHN (1755–1835), American jurist. John Marshall's father, Thomas Marshall, was his principal tutor and destined him from infancy for the bar. He was strongly influenced in his youth by the rising debate over American rights, in which Thomas Marshall as a follower of Patrick Henry and a friend of Washington had a part. Between 1776 and 1779 John served in the revolutionary army, emerging from it a convinced nationalist. In 1780 he attended a course of lectures on law by Chancellor Wythe at William and Mary College, practically his only formal instruction of any sort, and in the same year was admitted to the bar of Fauquier county. Two years later, having been elected a member of the general assembly of Virginia, he moved to Richmond.

His rise to political prominence and his success at the bar were rapid. In 1788 he was a member of the Virginia ratifying convention. In 1797 he became one of the famous X. Y. Z. commission to France and in 1799 was elected to the House of Representatives, where he made a notable constitutional argument in the so-called Jonathan Robbins' Case, in which Adams' opponents accused him of invading the sphere of the judiciary by handing over to British authorities an Englishman who had committed murder on a British vessel. Marshall convinced the House that the action of the president was in conformity with the Jay treaty and within his official prerogative in the diplomatic field. In 1800 Marshall became secretary of state in Adams' cabinet and in the following year Adams without consulting him nominated him, in succession to Ellsworth, chief justice of the Supreme Court, a position which he held until his death.

Marshall's principal achievements as chief justice were in the field of constitutional interpretation. They include the successful assertion for the Supreme Court of its role as final authorized interpreter of the constitution, both as against Congress and as against the states, and the establishment of the rule of liberal interpretation of the powers of the national government which rendered the judicial review of acts of Congress a negligible factor of the constitutional system until the Dred Scott decision. He also extended the obligation of the contracts clause to public grants, including charters of corporations, and laid the argumentative foundation for the doctrine that Congress' power over commerce is exclusive, by which the commerce clause has become today one of the two most pervasive restrictions upon state power. Underlying these achievements were certain values: Marshall believed in national unity for its own sake and also because he conceived the country at large to be the proper theater of individual enterprise and, by the same token, of national enrichment and cultivation. Conversely, the objects of suspicion and attack of the court under his guidance were the state democracies, the curbing of which had been a principal purpose of the convention of 1787.

Aside from Marbury *v.* Madison, Marshall's great formative opinions lie between the years 1819 and 1827 (see especially Wheaton's *Reports*,

vols. ii, iv, vi, ix, and xii), and their common provocation was the rise of the doctrines of states' rights and popular sovereignty. His tenacity and success in waging an uphill fight against the forces ranged behind these ideas, with the support of colleagues from the ranks of political foes, are among the most remarkable personal achievements in American history. It is essential to recognize, however, that his syllogistic method was characteristic of his period; nor were his contemporaries disposed to question that to the judicial rendering of law a peculiar validity adhered. Moreover Marshall was singularly successful in prevising the future. The values safeguarded by his version of the constitution remain for the most part those which are safeguarded by constitutional law today. The fundamental balance in the constitutional system, that between democracy and property, is in important measure his contribution.

He also contributed to international law. During his term he delivered eighty opinions involving this field of jurisprudence. An outstanding feature of these is his insistence that such matters as the recognition of national independence or the interpretation of treaties are political and not judicial questions and that decisions in such cases when made by the political arm of the government must be followed by the courts.

EDWARD S. CORWIN

Works: *Constitutional Decisions of John Marshall*, ed. with an introductory essay by J. P. Cotton, 2 vols. (New York 1905).

Consult: Beveridge, A. J., *The Life of John Marshall*, 4 vols. (Boston 1916–19); Corwin, E. S., *John Marshall and the Constitution*, Chronicles of America series, vol. xvi (New Haven 1919); *John Marshall, Life, Character and Judicial Services*, compiled and ed. by J. F. Dillon, 3 vols. (centenary ed. Chicago 1903); Veillier, Juliette, *Le grand-juge Marshall et le droit des gens* (Paris 1923).

MARSHALL, LOUIS (1856–1929), American constitutional lawyer and Jewish communal leader. Marshall was born in Syracuse of a German Jewish family. He studied law at Columbia University and soon achieved great repute as a constitutional lawyer. As a member of a New York law firm which represented big business corporations and the "vested interests" in general Marshall was a conscientious upholder of the old rugged individualism against all the new demands of modern society. He argued against home rule legislation for New York City, against the child labor amendment and other progressive legislative acts. On the other hand, he strenuously opposed the Lusk laws in New York and the attempt to oust the Socialist assemblymen from the New York state legislature in 1920. He acted as mediator in the cloak makers' strike of 1910 and prepared the protocol of settlement. He was also an ardent defender of the civil rights of the Negro. He was in high standing in the Republican party and was a member of the constitutional conventions of New York in 1890, 1894 and 1915. In the words of his biographer, eulogizer and aide-de-camp in the field of Jewish affairs, Cyrus Adler, he was "an American, Republican, law-abiding lawyer, a citizen of the Old School."

Marshall's main interest, however, was the Jewish question in all its ramifications. As one of the founders of the American Jewish Committee in 1900 and as its president from 1912 until his death he practically dominated Jewish public life in the United States for over twenty-five years. One of his most important achievements in this connection was in securing the termination of the treaty of 1832 with Russia because of that country's discriminatory policy toward visiting American Jews. Marshall's conception of the Jewish problem was reduced to the pure and simple politico-legalistic question of civil and religious liberty and equality of every citizen before the law as guaranteed by the constitution. The American Jewish Committee was conceived as an organization of rich and influential "representative Jews" and had little in common with the aspirations of the great masses of the eastern European Jews and with the great problems which agitated them, especially the Zionist movement. As a stanch adherent of the old time liberal conservatism Marshall led a bitter fight against any kind of national movement among the Jews and for a time was in a strategic position to impose his will—his "Marshall law," as Zangwill said—upon world Jewry.

The World War and the subsequent evolution of world politics together with the greater self-assertion of the eastern European Jews brought about a change in Marshall's attitude. He became president of the American Jewish Relief Committee immediately after the outbreak of the war and was active in the subsequent Joint Distribution Committee. Although he opposed from the start the movement for the American Jewish Congress and the demands for national minority rights for the Jews, he finally agreed to cooperate and went to the Paris Peace Conference as head of the American Jewish delegation and played a leading role in securing the adoption of the minorities provisions. Marshall's last im-

portant achievement was his part in the creation of the Jewish Agency for Palestine. After extensive negotiations, in which he persisted in toning down the nationalist implications of the Palestinian problem, he made a pact in 1929 with Dr. Chaim Weizmann for the cooperation of Zionists and non-Zionists in the practical task of upbuilding Palestine. The first sessions of the Jewish Agency in Zurich in August, 1929, at which Marshall was chairman, were the culmination of his career. He became for a short time the outstanding leader in world Jewry. Several days afterwards, however, he died, and with his death his work began to disintegrate.

A. CORALNIK

Consult: Adler, Cyrus, Lehman, Irving, and Stern, Horace, *Louis Marshall* (New York 1931); Wise, James Waterman (Analyticus), *Jews Are Like That* (New York 1928) p. 177–205.

MARSHALL, WILLIAM (1745–1818), English agriculturist. He was the son of a Yorkshire farmer and became a trader and planter in the West Indies until 1774, when he retired to a farm near Croydon, Surrey. In 1778 he published a book on his farming experiences, *Minutes of Agriculture* (London). For the purpose of increasing general knowledge of progressive farming he made and published between 1787 and 1798, after one or two years' residence in each area, a survey of English agriculture. By the latter date his reputation was second only to that of Arthur Young. He set himself against the "false spirit of farming," that overoptimism which was a legacy of seventeenth century writers. He warned against "elevated hopes of pecuniary gain" and wrote, "If you meet with an implement, process or plan of management which pleases you, do not hurry to the field of practice . . . consult deliberately your soil, situation and servants." This sane and cautious approach considerably raised the prestige of agricultural literature.

Marshall advocated leases and the farm of medium size. Although less bigoted than most, he was nevertheless a strong supporter of enclosures and considered the General Enclosure Act of 1801 as the most laudable measure adopted by the board. His claim to have originated the idea of the Board of Agriculture, founded in 1793, is untenable. At first an active member, his failure to secure the secretaryship and a feeling that his ideas were being adopted without due acknowledgment led him into active opposition. This attitude was intensified by the board's proposal for an Agricultural College, which he had suggested, but not originally, in his *Minutes*. This hostility cost him the support of many influential agriculturists. He now concentrated on his own surveys and compiled a critical commentary of the board's activities. Of his projected general treatise on English rural economy he completed only the section dealing with estate management.

Although more exclusively agricultural and perhaps more sound than those of Young, Marshall's writings were less popular and influential. Nevertheless, the striking advance made by agriculture during his lifetime owed much to his efforts.

G. D. AMERY

Works: *The Rural Economy of Norfolk, Yorkshire, Gloucestershire, the Midland Counties, the West of England and the Southern Counties*, 12 vols. (London 1787–98, 2nd ed. 1795–1805); *Reviews of the Reports to the Board of Agriculture* (York 1808–17); *On the Landed Property of England* (London 1804); *On the Appropriation and Enclosure of Commonable and Intermixed Lands* (London 1801).

Consult: Ernle, Lord (Prothero, R. E.), *English Farming Past and Present* (4th ed. London 1927).

MARSILIUS OF PADUA (*c.* 1275–*c.* 1343), Italian political theorist. Exactly what share in the authorship of the *Defensor pacis* should be attributed to the Frenchman John of Jandun is uncertain but it cannot have been important. It speaks for Marsilius as the essential if not the sole author that the thought of the *Defensor* issues unmistakably out of the experience of the north Italian communes, of which Padua was one. Not only had these communes won self-government but they had like the rest of the world been thrown into confusion by the claims of the papacy to ultimate sovereignty over all states. These claims had reached their dramatic climax in the bull *Unam sanctam* (issued by Boniface VIII in 1302). The defeat of Boniface by Philip IV of France and the removal of the popes to Avignon did not diminish the papal pretensions, and the struggle broke out afresh in 1322 when Pope John XXII refused to recognize Louis of Bavaria as emperor elect. At this Marsilius resolved to hesitate no longer in voicing his accumulated anticlerical indignation.

The *Defensor pacis* is a reasoned if virulent attack not only on the papal supremacy but also on the whole ecclesiastical jurisdiction which had been gradually built up by means of canon law. To justify his hostility to the church the author begins his treatise by setting forth his

theory of the state, in which although he borrows freely from Aristotle he reflects substantially the actual developments in the Italian communes. This closeness to reality gives the measure of the Paduan's advance over his metaphysically oriented predecessors, such as Aquinas and Dante. He declares in favor of the sovereignty of the people, who are the ultimate "legislator"; the executive (*pars principans*) he conceives of as the agent of the legislator and thinks that its functions will be most successfully performed when entrusted to a constitutionally limited monarch. In such a state, in the origin of which God, contrary to all mediaeval theory, has no share, the role of the priesthood should be subordinate. But what are the facts? By a monstrous usurpation the priesthood has projected itself into the affairs of every Christian commonwealth and produced an intolerable confusion. The state, organized to secure internal peace, is balked of its prime purpose, which, as the title indicates, the aroused author rises to defend.

Having cleared the ground with his purely secular theory of the state Marsilius next analyzes and disproves the false claims put forth by church and pope. While this section often sinks to the level of a ferocious anticlerical diatribe, it is notably original in attempting to rest its case not on the purely logical arguments characteristic of the schoolmen but on an examination of the relevant historical data. By going back to the Scriptures the author recovered the evangelical norm, in the light of which the immunities and wealth of the clergy as well as the absolutism of the pope appear as monstrous perversions of the original spirit of Christianity. Secularism and historical criticism are the two strong timbers which the *Defensor pacis* contributes to the intellectual foundations of the modern world.

FERDINAND SCHEVILL

Works: *Defensor pacis* (Basel 1522; ed. by C. W. Previté-Orton, Cambridge, Eng. 1928), tr. by William Marshall (London 1553); his *Tractatus de translatione imperii* and the *Tractatus de iurisdictione imperatoris in causis matrimonialibus* can be found in Goldast, Melchior, *Monarchia S. Romani Imperii*, 3 vols. (Hanover and Frankfort 1611–14) vol. ii, p. 147–53 and p. 1383–91; *Defensor minor*, ed. by C. K. Brampton (Birmingham 1922).

Consult: Battaglia, Felice, *Marsilio da Padova e la filosofia politica del medio evo*, Studi filosofici, n.s., vol. iv (Florence 1928); Riezler, Sigmund von, *Die literarischen Widersacher der Päpste zur Zeit Ludwig des Baiers* (Leipsic 1874); Stieglitz, Leopold, *Die Staatstheorie des Marsilius von Padua*, Beiträge zur Kulturgeschichte des Mittelalters und der Renaissance, vol. xix (Leipsic 1914); Emerton, Ephraim, *The Defensor Pacis of Marsiglio of Padua*, Harvard Theological Studies, vol. viii (Cambridge, Mass. 1920); Allen, J. W., "Marsilio of Padua and Mediaeval Secularism" in *The Social and Political Ideas of Some Great Mediaeval Thinkers*, ed. by F. J. C. Hearnshaw (London 1923) ch. vii; Sullivan, James, "The Manuscripts and Date of Marsiglio of Padua's 'Defensor Pacis,' " Brampton, C. K., "Marsiglio of Padua," and Previté-Orton, C. W., "Marsiglio of Padua" in *English Historical Review*, vol. xx (1905) 293–307, vol. xxxvii (1922) 501–15, and vol. xxxviii (1923) 1–18.

MARTELLO, TULLIO (1841–1918), Italian economist. Martello was professor of political economy at the University of Bologna from 1883 to 1917. A disciple of Francesco Ferrara, from whom he adopted not only the fundamental principles but also the incisive style and the controversial tenor characteristic of his writings, Martello surpassed the master in the thoroughness of his economic liberalism. He opposed all forms of collective interventionism in the sphere of economic activity, even rejecting progressive taxation as an instrument of "artificial" redistribution of wealth. Martello's works, which seem inspired more by the desire of combating economic heresy than by that of opening new avenues of economic thought, are not likely to survive the test of time. His best work is perhaps *La moneta e gli errori che corrono intorno ad essa* (Florence 1883), in which he effectively combated some current fallacies in monetary theory, especially those concerning the nature and function of money and the difference between discount and interest and their respective variations. An opponent alike of the monometallic and bimetallic theories as well as of the state theory of money, Martello advocated with Ferrara absolute freedom of coinage and limitation of the function of the state to mere control of the monetary standard. This idea is debatable, as are his views, already condemned by experience, on monetary crises, which he held are always supposed to be the consequence of economic crises and never the cause; on the variations of the value of money, which he deemed of no importance as they tend to affect uniformly all phases of economic life; and on the futility of every attempt to stabilize the value of money, a corollary of the preceding assertion. Martello refined Ferrara's theory of cost of reproduction and formulated the theory of cost of substitution, which more adequately describes the general principles underlying the process of exchange.

CARLO PAGNI

Important works: *Storia della Internazionale dalla sua*

origine al congresso dell'Aja (Padua 1873); *Stato attuale del credito in Italia e notizie sulle istituzioni di credito straniere* (Padua 1874); *La questione dei banchi in Italia* (Florence 1877); *L'economia politica antimalthusiana e il socialismo* (Venice 1894); *L'imposta progressiva in teoria e in pratica* (Venice 1895, 2nd ed. Turin 1895); *L'economia politica e la odierna crisi del darwinismo* (Bari 1912); *In difesa del giuoco d'azzardo legalmente disciplinato* (Padua 1914).

Consult: Amoroso, Luigi, and others, *In onore di Tullio Martello* (Bari 1917); Bertolini, A., in *Giornale degli economisti*, vol. lvi (1918) 150–52; Piante, Giovanni de, "L'opera scientifica di Tullio Martello" in *Economia*, vol. xi (1927) 7–23.

MARTENS, FEDOR FEDOROVICH (1845–1909), Russian international lawyer and diplomatist. Martens was professor of international law at the University of St. Petersburg from 1871 to 1905. A member of the Council at the Russian Ministry for Foreign Affairs, he was present as Russian delegate at many international conferences, such as the 1874 conference for codification of the laws of war, the anti-slavery conference of 1889–90 and the two Hague peace conferences of 1899 and 1907.

Martens' doctrine of international law is a positivist one: it is based upon an idea of "international community" founded upon necessities of life under a common standard of civilization. Development of international rules is consequently dependent on the measure of common consent on the part of the civilized states. State practise and not doctrinal expansion is the main source of international law. Martens was in advance of his time in stressing the importance of the process of "international administration," devoting a great part of his treatise on international law to interstate activity for the protection of social and economic interests.

While maintaining in theory a cautious attitude toward international law and its progress Martens contributed much in practise toward its growth and its rule. At international conferences he supported the codification of international law, thereby assisting to elucidate questionable points and incidentally to fill up existing gaps. As one of the best known international arbitrators of his time he was frequently appealed to by litigant states, rendering many a famous award and contributing largely to the development of international jurisdiction and of international judge made law.

B. AKZIN

Important works: *O konsulakh i konsul'skoi urisdiktsii na Vostoke* (St. Petersburg 1873), tr. into German by H. Skerst as *Das Consularwesen und die Consular-jurisdiction im Orient* (Berlin 1874); *Sovremennoe mezhdunarodnoe pravo tsivilizovannikh narodov*, 2 vols. (St. Petersburg 1882–83, 5th ed. 1904–05), tr. into French by Alfred Léo as *Traité de droit international*, 3 vols. (Paris 1883–87), and into German by Carl Bergbohm as *Völkerrecht, das internationale Recht der civilisirten Staaten*, 2 vols. (Berlin 1883–86); *Recueil des traités et conventions conclués par la Russie avec les puissances étrangères*, ed. by F. Martens, 15 vols. (St. Petersburg 1874–1909).

Consult: Rivier, A., "Literarhistorische Uebersicht der Systeme und Theorien des Völkerrechts seit Grotius" in *Handbuch des Völkerrechts*, ed. by F. von Holtzendorff, vol. i (Berlin 1885) p. 521–23; Lammasch, Heinrich, "Friedrich von Martens und der Berliner Vertrag" in *Zeitschrift für das Privat- und öffentliche Recht der Gegenwart*, vol. xi (1884) 405–22; Kamarowsky, C. L., in Institut de Droit International, *Annuaire*, vol. xxiii (1910) 538–43.

MARTENS, GEORG FRIEDRICH VON (1756–1821), German jurist. Martens was born in Hamburg. In 1784 he became professor of law at Göttingen, from 1808 to 1813 he was state councilor in the kingdom of Westphalia, from 1814 privy councilor in the kingdom of Hanover and from 1816 deputy from this state to the German *Bundestag* at Frankfort on the Main. His reputation rests upon his works on international law. Of these the most important is his *Primae lineae juris gentium europaerum practici* (Göttingen 1785; tr. by W. Cobbett, Philadelphia 1795), which he later enlarged into his *Précis du droit des gens modernes de l'Europe* (Göttingen 1789; finally reedited by Charles Vergé, 2 vols., Paris 1864) and published also in a German version, *Einleitung in das positive europäische Völkerrecht* (Göttingen 1796). Martens preferred French because it was the international language of diplomacy, and he made use of it for his great collection of treaties, which since its publication has generally been known as the *Receuil Martens* (first series, 7 vols., Göttingen 1791–1801; last series still being published, vols. i–xxiii, Leipsic 1909–31).

Martens was one of the cofounders of positivism in international law, which began with Bynkershoek and was also especially advanced by Johann Jakob Moser. He was the first to banish the law of nature from international law except as a standard of value for the critique, upon grounds of political expediency, of the positive international law actually recognized by the practise of states. He especially rejects as utopian a general and cosmopolitan law applicable to the whole of humanity. States must be released from their natural condition of insecurity and fear by converting the international

law, founded on the law of nature, with its recognition of fundamental rights of states, into a general positive international law, the distinctive mark of which would be the possibility of securing its observance by force—if necessary by war. Martens presumes or feigns that the European system of positive international law would coincide with the universal international law founded on the law of nature. It is thus only necessary to engage upon a natural law critique of the particular systems of international law which either by treaty or custom are valid between individual states of the family of nations. The strongly positivistic science of international law of the present day, going far beyond Martens' position, no longer admits the law of nature as a standard system with a claim to legal validity but recognizes only a legal philosophical standard of value and a scientific politics of international law directed rather to practical details.

ROLF KNUBBEN

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MARTIAL LAW is a legal concept by which Anglo-American civil courts have sought in times of disorder to define the limits of executive or military control over citizens in domestic territory. It is analyzed in so many different ways, and there are so many theories as to its sanction, that no definition can do more than express the most current legal impressions. Martial law is regarded as the substitution of the will of the executive or military commander for the process of the courts. Its justification is necessity, and its existence is a "question of fact." The most usual test of that "fact" is to determine whether or not the courts are open; but the limits, if any, to executive action under martial law, and the respective powers of the legislative, executive or judicial branch of the government in determining the question of fact involved, are subject to too many contradictory qualifications to permit brief statement. Any situation to which martial law might theoretically be applicable may also be discussed in interchangeable terms to which different sets of doctrine apply.

Let it be assumed that a body of citizens unlawfully assembles and threatens disorder in domestic territory. Legally the situation presents several possibilities. It may be called a riot, in which case any proper officer can order the assembly to disperse—a procedure commonly known as reading the Riot Act because of the provisions of the English Riot Act of 1715, which made felons of any participants who did not disperse within one hour after such order. The officer may call on any citizen to aid him; and reasonable force, which amounts even to killing, may be subsequently justified in court. If troops are called to assist, the situation is usually described as one involving "the use of troops in aid of civil authorities." Congress empowers the president to send troops at his discretion for this purpose on petition from the governor of a state; and the president has on occasion sent troops over a governor's objection to enforce the laws of the United States. This is still analogous to quelling a riot, in that civil authority is supposed to be supreme and judicial processes may be ignored or suspended only when it is "reasonable" to do so. The same situation may, however, be described as a state of martial law. A proclamation of martial law by the governor does not establish but only proclaims the fact of its existence. This "fact" means in theory that the disorder is such that no court can remain open; but a court which desires to sustain the executive may easily find analogies to prove that even though it is actually open, it is nevertheless closed in legal contemplation. This result has been reached either upon the theory that the determination of the existence of martial law by the governor will not be questioned by a court if there is any reasonable evidence to support it, or upon the theory that martial law may exist even where courts are open if the danger is such that it is inadvisable for them to act. Nevertheless, even a court which has lost jurisdiction by admitting the existence of martial law may take jurisdiction later to penalize the "unreasonable" exercise of martial law by the executive.

In actual result, practically everything that can be done under the phrase martial law can also be done by the use of troops in aid of civil

authorities. Persons may be shot, clubbed or incarcerated under the cloak of either phrase. Only when it becomes necessary to justify a formal trial and punishment by a military commission is "martial law" essential. The phrase military commission does not describe any particular form of organization, but is merely an escape from limitations of courts martial jurisdiction over civilians. It is difficult to see how logically the sentence of such a commission could run beyond the period of martial law; but on this as on most questions there is a split of authority.

Judicial interpretation of the legal situation occurs, during the existence of a disorder, by habeas corpus proceedings or afterwards in a suit for damages or, more rarely, in a criminal prosecution. It makes little practical difference whether the situation is described as martial law or one involving the use of troops in aid of civil authorities. Habeas corpus cannot issue in a state of martial law, because theoretically no court is sitting to grant it. If the troops are in aid of civil authorities the writ may be "granted," but its execution "suspended" on the ground of necessity. Hence it is said that even the suspension of the writ of habeas corpus does not necessarily mean that martial law exists. The liability of military commanders in either situation is limited by the vague term "reasonable conduct"; and subordinate officers or troops are not liable for obeying orders which are not apparently unreasonable. There seems therefore no particular advantage in an executive proclamation of martial law except for its emotional effect on the public or to justify punitive sentences of military commissions extending beyond reasonable detention for the preservation of order. Possibly because martial law has an unpopular connotation, army regulations provide only for the use of troops in aid of civil authorities.

Just as the phrase martial law merges into troops in aid of civil authorities, so the latter phrase is capable of disappearing into the maze of chancery powers when it is desired that the armed forces should seem incident to the functions of the judiciary rather than the executive. Injunctions have been issued which have served the same purpose as a proclamation of martial law. In 1877 federal troops were under the command of officials of the federal court (Secor *v.* Toledo, Peoria & Warsaw Ry. Co., 21 Fed. Cas. 968, and King *v.* Ohio & Mississippi Ry. Co., 14 Fed. Cas. 539), whose military measures were supported by contempt proceedings. In 1895 the Supreme Court of the United States (*In re* Debs, 158 U. S. 564) was seeking among the peaceful analogies of injunctions against nuisances to reconcile actual control by troops with the supremacy of the court. "It was not the soldiers that ended the strike," said Mr. Justice Brewer approvingly quoting Eugene Debs. "It was simply the United States courts that ended the strike." Thus the term martial law is avoided in such situations, and the courts remain "open"; it is only their customary attitudes and procedures which are "closed." The repeated attempts to analyze the doctrine of martial law arise from the paradoxical necessity of suppressing disorder by means which the common law itself has declared illegal. The function of the phrase is thus to give the appearance of legality to action which has neither legislative nor common law sanction. Once that purpose is understood, the causes of the increasing verbal confusion become clear.

Since the term martial law is not used except to describe the suspension of ordinary protective maxims and procedure of domestic courts, it is not difficult to make formal distinctions between it and such concepts as "the laws and customs of war," and "military law and military government." The laws and customs of war are rules of international law, derived from usages and international agreements such as the Hague and Geneva conventions. Military law (*q.v.*) is the law applied to troops in peace as well as in war. It is codified principally in the Articles of War, and it is administered for the most part by courts martial, which theoretically have no jurisdiction to enforce martial law, because the Articles of War do not contemplate jurisdiction over civilians. Military government is a descriptive term which applies to any form of government by an army with or without the aid of civil authorities. Theoretically it cannot be established over citizens in domestic territory unless a revolt has become sufficiently serious to justify the recognition of the rebels as "belligerents." It is set up in enemy or alien territory, in war, or in pursuance of treaty rights, or for the protection of the lives or property of nationals.

These distinctions arise from attempts to use old words in modern situations. They had no meaning in connection with the early Court of the Constable and Martial, from which the term martial law arose. That court possessed a broad and somewhat vague jurisdiction over feats of arms and heraldry, but also over such matters as appeals of death or murder committed beyond

the sea, and offenses of soldiers contrary to rules of the army. It represented the military aspects of feudal government. After its disappearance the term martial law justified the exercise of the king's prerogative, in peace as well as in war. In 1628 Parliament, in the famous Petition of Right, forced the consent of the king to the abolition of what was then called "martial law" but later commentators agreed that this abolition was not intended to extend to times of war or insurrection. The king's prerogative was supposed to furnish one of the theoretical sanctions for the control of such situations. So long as martial law was supposed to be possible only during war no peculiar distinctions were necessary.

Lieber in his famous orders for the Union armies in the American Civil War uses martial law to include both military law, the customs of war, and military government. But the nice analysis of the term in the United States began also with the Civil War and received its most famous expression in the Milligan Case [71 U. S. 2 (1866)]. A military commission had sentenced Milligan to death for activities in Indiana during the Civil War. In granting habeas corpus the majority of the court attempted to outlaw martial law by limiting it to times of complete anarchy, basing it on necessity rather than legality. The minority, however, considered it proper where, although courts were open, it was inadvisable for them to act. Since the Milligan Case the most celebrated instances involving the applicability of martial law have been in labor troubles. In the Colorado strike in 1904 practically all the extreme powers except sentences by a military commission were justified without overruling the Milligan Case under the pretense that the case involved merely the use of troops in aid of the civil authorities [*In re* Moyer, 35 Col. 154, 159 (1905), Moyer *v.* Peabody, 212 U. S. 78 (1909)]. In West Virginia, because a sentence by a military commission was involved, the court rested a refusal to grant habeas corpus on the theory that the reasonable determination of martial law by the governor was not to be questioned (State *v.* Brown, 71 W. Va. 519). In Montana under similar circumstances the court denied validity to the jurisdiction of a military commission (*In re* McDonald, 49 Mont. 454). The weight of authority is supposed to be with the Montana case, yet the possibilities under even the Montana doctrine of justifying any reasonable action by the executive in putting down disorder with the assistance of troops are such that there seems little difference in practical effect between the theories. It is usual, however, to criticize the West Virginia cases and to assume that the Montana view offers greater protection against arbitrary power.

In England since 1876, probably because of liberal legislative provisions concerning trade unions, the concept of martial law has not been developed in labor disputes. The important cases have arisen from the Boer War and the Irish insurrections. The celebrated Wolfe Tone case in 1798 (243 State Trials 613) was formerly the authority cited for the notion that no man could be punished by a military court so long as there existed a civil court to grant habeas corpus. Later cases, notably the Marias Case in 1899 and the cases of *In re* Allen (1921) and *Ex parte* Childers (1923), gave support to the theory that if war is immediately threatened martial law may be applied even though courts are open; the determination of this necessity is for the courts, but once a state of war is proved the judiciary will no longer interfere with any act of the military. It has been customary in England to pass an act of indemnity for the protection of officials administering martial law; thus there is involved a recognition that the older theory of the Wolfe Tone case may still have validity as an argument.

By the passage of the Emergency Powers Act, inspired by a threatened strike in 1920, the English Parliament has probably made the conception of martial law obsolete by substituting for it special legislative sanctions. This act governed the general strike of 1926. Separate acts similar thereto have been passed in Ireland. In India extraordinary powers are exercised by summary courts sitting in chancery by virtue of detailed colonial ordinances, which do not mention martial law. Martial law conceptions may still be conceivably relevant if the Emergency Powers Act does not go far enough for the particular disorder, but in view of its detailed provisions this is improbable. The emergency provisions can be called into effect by royal proclamation for the period of one month. Parliament then convenes within five days and may terminate their operation by resolution. Punishments are limited to three months, and general regulations affecting transportation, health, food and the like are put into effect by various executive boards.

On the continent and in Latin American countries a common legal justification of drastic military action in emergencies follows the French

pattern, which regulates a "state of siege." Since no justification for executive rule was required under the theory of a monarchy, the idea of martial law did not develop in France until after the revolution. In 1791 the Assembly borrowed the term from English law and by special act provided for military control on executive proclamation of a state of disorder. In 1791 military control of the Field of Mars under the martial law concept created such popular resentment that this particular term had a short life; it was abolished in 1793. In 1791 the phrase "state of siege" was first used by the Assembly to describe military control in a civil community actively besieged by a foreign enemy. It was used in opposition to "state of war," which might exist over a wider area without necessarily displanting civil authority. From this description of an actual military state of siege the fictitious, or political, state of siege developed. The conditions under which a state of siege could be declared received their final legislative expression in 1849, except for the supplementary act of 1878, which among other provisions contained one limiting it to armed insurrection in time of peace—a result of unpleasant memories of declarations of a state of siege during the Second Empire.

Under the French law the state of siege might be put into effect by an executive declaration by the president of the republic if the chambers were not in session, but in such a case it was required that they be immediately convened for the purpose of ratification. The law or decree declaring a state of siege had to indicate the areas to which it was to apply and to limit its duration in time. It had become a matter of pride among French writers that the state of siege was limited by preestablished law, resulting only in the transfer of limited powers, regulated in advance, from the civil to the military authority. These powers in general consisted of authority to direct or supersede the civil police in the exercise of their ordinary functions and included jurisdiction of military courts over civilians for a wide variety of offenses and the abrogation of certain defined restrictions on individual liberty.

A comparison of legal terminology used in different countries without comparing the organizations which use that terminology, although frequently indulged in, is of course mere pedantry. From a purely dialectic point of view it might be assumed that the preestablished limitations of the state of siege are more consistent with the ideal of a rule of law than is the unlimited dictatorship following a declaration of martial law in the United States. Yet it must be remembered that on the continent as well as in America, such phrases are accompanied by escapes, verbal or procedural. In France official action is governed by the Conseil d'État. The *droit administratif* laid down by this body has no similarity to the American conception of administrative law. It is supposed to include regulation of officers as opposed to decision of private disputes. For example, in 1913 in order to break up a railroad strike, the French minister of war called the employees into military service in order to subject them to military discipline. His action was sustained by the Conseil d'État on the ground that the minister of war acted reasonably in regard to national safety. No reference to any particular legal doctrine was thought necessary, and no state of siege was declared. The power of the Conseil d'État to affect the operation of legal rules without any formal repudiation of them is again illustrated during the war. When the president of the republic changed many existing provisions of law during the state of seige which had been declared over the whole of France, he was sustained by the Conseil d'État under its jurisdiction to review official action in emergency. In the United States the same result could have been accomplished only first by the executive's declaration that the courts were unable to function, because of disorder, and second by refusal by the courts to look at the facts behind the declaration of the executive—an elaborate logical device made unnecessary in France by the existence of a separate court passing on official action. Under such a system as this it is easy to find a judicial warrant for the existence of a preventive censorship during the war which seemed to go beyond the requirements of the state of seige. It was not even put to a judicial test. The Court of Cassation, the highest civil law court, attempts precise legal definition. The Conseil d'État passes on the justification of administrative officers in departing from these legal definitions. Thus inconsistent results from these two bodies may easily be reconciled by the French argumentative technique. The question of the social justification of the extreme war measures taken by the French is obviously irrelevant here.

Even before the war some continental countries had refused to follow French argumentative technique for the justification of emergency

action. Thus, in Belgium, where French law had originally been in force, it was generally agreed that a political state of siege would be unconstitutional because the constitution expressly provided that it could never be suspended in whole or in part. In case of domestic disorder the practise was for the civil authorities to call in the military—a practise obviously closely resembling the American "use of troops in aid of civil authorities." When the World War came the military state of siege had to be regulated by royal decree. The original situation in the Netherlands, where French law had also once applied, was somewhat similar, but after a constitutional amendment a military and political state of siege was finally regulated by a law of 1899.

The conceptual opposite of the state of siege is found in the term "law of circumstance" in emergencies, which is something like the martial law concept without its dialectic embroidery. Germany, which before the Weimar constitution had used the term "state of siege"—the Prussian law on the subject, had, because of complicated constitutional provisions, become the law for the whole empire except Bavaria—abandoned it under that instrument, which in article 48 created practically a legalized dictatorship in emergencies. In Italy until 1926 there was no general regulation of a state of siege but when necessary it was, nevertheless, always declared by royal decree with such varying incidents as were necessary in view of the particular disorder. In 1926 the Fascist regime secured the legal regulation of a "state of war," and a "state of public danger." Today Mussolini, as the head of the government, may cause decrees to be issued without interference either by the council of the Fascist party or by Parliament. In such a situation obviously, phrases coined for the purpose of control of the executive by the judiciary are of little importance.

England, with its Emergency Powers Act of 1920, may be said to be turning toward the continental pattern, although it still retains for possible use the theory of martial law as a handy dialectic tool. The difference in result between a preestablished code relating to disorder, and the dictatorship possible under the American concept of martial law and the newer types of continental regulation, depends on psychological factors which are difficult to appraise. Given a situation which arouses sufficient fear in a governing class, no formal rules can ever prevail. On the other hand, the inhibitory effect of advance regulation is by no means unimportant. Hence it does make a difference whether the regulation of disorder is provided for in advance or left to the realm of loose inspirational ideals. Certainly the ideals of the Milligan Case make fine argumentative material for speeches against military control of labor difficulties. Yet by the denial of an intermediate situation where regulation by a more summary process than that afforded by ordinary procedure might be advisable, they force the creation of logical escapes from these ideals. The opinion of the Milligan Case was not written with the ordinary sort of domestic disorder in mind. The court was concerned rather with the reconstruction of the South, and in view of the apparent tendencies of the time it may well have been thought that no denial of executive power could be put too strongly. But the Milligan Case failed to appeal to the emotions of Congress and has become today only a definition of martial law. The emotional attitude which its splendid phrases induce does not allow admittance of the need for extraordinary procedure in emergencies, and as a result there is absolutely unregulated action in labor disputes. Martial law therefore can scarcely be regarded as more than a dignified phrase under which courts may, when they choose, abdicate their powers in favor of an unregulated executive without admitting that this is what they are doing.

THURMAN ARNOLD

See: MILITARY OCCUPATION; WARFARE; RIOT; STRIKES AND LOCKOUTS; REVOLUTION AND COUNTER-REVOLUTION; INSURRECTION; MILITARY LAW; COURT MARTIAL; COURTS, ADMINISTRATIVE; COURTS; HABEAS CORPUS; CIVIL LIBERTIES; INJUNCTION; MILITIA; POLICE.

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Michigan Law Review, vol. xiv (1915–16) 102–18, 197–218; Wallace, George S., "The Need, the Propriety, and the Bases of Martial Law" in *Journal of the American Institute of Criminal Law and Criminology*, vol. viii (1917–18) 167–89 and 406–19; Flood, G. F., "Martial Law and Its Effect upon the Soldier's Liability to the Civilian" in *University of Pennsylvania Law Review*, vol. lxxiii (1924–25) 380–401; Amos, M. S., "Martial Law in Egypt, 1914–1923" in *Law Quarterly Review*, vol. xli (1925) 263–71.

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MARTIN, BON-LOUIS-HENRI (1810-83), French historian and politician. At the age of twenty Martin went to Paris, where he published novels, stories and plays, mostly on historical subjects. At the request of the publisher Mame he undertook an illustrated popular history of France which was to consist of forty-eight volumes and was to appear at the rate of a volume every fortnight. The first volume appeared in 1833; Martin considered it unsatisfactory, began the work again on the basis of a new conception and during the course of the next three years published the fifteen volumes which comprise the first edition of his *Histoire de France . . . jusqu'en juillet 1830*. Although by virtue of its pleasing style it enjoyed a great popular success and was reprinted without change in a second edition, the author was dissatisfied with the results of his hasty compilation and spent seventeen years in revising it. The third edition, concluding with the year 1789, in nineteen volumes (1837–54) constitutes a virtually new work; permeated with the spirit of contemporary liberalism and nationalism, it won widespread acclaim in middle class circles. Proceeding from a rather arbitrary reconstitution of Celtic civilization Martin discerns throughout the course of French history the influence of the *âme gauloise*, and traces in the very dawn of national history the outlines of the liberal ideas which triumphed in the French Revolution. The work went into a fourth edition (17 vols., 1855–60), which was brought up to date in his *Histoire . . . depuis 1789 jusqu'à nos jours* (8 vols., Paris 1878–85) and abridged in a *Histoire populaire depuis les temps les plus reculés jusqu'à nos jours* (7 vols., Paris 1867–85); it inspired many scholarly handbooks and thus had a great influence on the French public mind during the second half of the nineteenth century. The period covering the reign of Louis XIV and the decline of the monarchy have been translated from the third French edition by M. L. Booth (4 vols., Boston 1865–66). The section of the *Histoire populaire* covering the period since the French Revolution has been translated by M. L. Booth and A. L. Alger (3 vols., Boston 1877–82).

Since his youth Martin had been in contact with the Saint-Simonians and the leaders of the liberal party; he greeted the Revolution of 1848 with enthusiasm and his republican friends offered him a chair of history at the Sorbonne, which he was able to retain, however, for only three months. In retirement under the Second Empire he defended in his writings the causes of Italian unity (*Daniel Manin*, Paris 1859, 2nd ed. 1861; English translation, 2 vols., London 1862; *L'unité italienne et la France*, Paris 1861) and Polish independence (*Pologne et Moscovie*, Paris 1863). After the fall of the empire he aligned himself with Gambetta and the government of the national defense; he was elected deputy from the Aisne, his native province, in 1871 and became senator from the same department in 1876.

ED. ESMONIN

Consult: Hanotaux, G., *Henri Martin, sa vie, ses oeuvres, son temps, 1810–1883* (Paris 1885); Simon, Jules, *Mignet, Michelet, Henri Martin* (Paris 1890); Dide, A., "Henri Martin et la Révolution française" in *Révolution française*, vol. vi (1884) 577–82; L'Epinois, H. de, *Critiques et réfutations: M. Henri Martin et son Histoire de France* (Paris 1872); Fueter, E., *Geschichte der neueren Historiographie*, Handbuch der mittelalterlichen und neueren Geschichte, pt. i (Munich 1911) p. 549.

MARTIN, RUDOLF (1864–1925), German anthropologist. After studying in the natural sciences with Weismann and in philosophy with

Riehl at the University of Freiburg, Martin became *Privatdozent* in anthropology at the University of Zurich, then professor from 1899 to 1911 and finally successor to Ranke as professor of anthropology at Munich. He worked out the propositions and methods of craniology and anthropometry, examined and compared the various schools and in 1914 published the fundamental *Lehrbuch der Anthropologie in systematischer Darstellung mit besonderer Berücksichtigung der anthropologischen Methoden* (2nd ed., 3 vols., Jena 1928). His instruments for body and skull measurement and his tables of eye colors are widely employed by anthropometrists. Of his special works the classical examination of *Die Inlandstämme der malayischen Halbinsel* (Jena 1905), which portrayed the Senoi and Semang as two typical representatives of the Vedda and Negrito racial stocks, is particularly significant. In his last years Martin achieved exceptional success in the body measurements of school children. He is regarded as the last brilliant representative of the classical, descriptive and comparative anthropology in Germany.

EUGEN FISCHER

Works: *Anthropologie als Wissenschaft und Lehrfach* (Jena 1901); *Wandtafeln für den Unterricht in Anthropologie, Ethnographie und Geographie* (Zurich 1902); *Körpererziehung* (Jena 1922); *Anthropometrie* (Berlin 1925, 2nd ed. 1929).

Consult: Fischer, Eugen, in *Anatomischer Anzeiger*, vol. lx (1925–26) 443–48; Gieseler, W., in *Anthropologischer Anzeiger*, vol. ii (1925) 134 a; Saller, K., in *Münchener medizinische Wochenschrift*, vol. lxxii (1925) 1343–44; Oetteking, B., in *American Anthropologist*, vol. xxviii (1926) 414–17.

MARTINEAU, HARRIET (1802–76), English author. Her earliest publications were for the most part religious articles and tracts written from a Unitarian standpoint. When she was thirty years old, however, she became estranged from the Unitarian church and remained hostile to organized religion until 1851, when she came under the influence of positivism. In 1853 she published *The Positive Philosophy of Auguste Comte, Freely Translated and Condensed* (2 vols., 3rd ed. London 1893), a work which Comte himself accepted as an authoritative statement of his creed.

Harriet Martineau is famous chiefly as a popularizer of economics. In *Illustrations of Political Economy* (25 vols., London 1832–34), *Poor Laws and Paupers Illustrated* (10 vols., London 1833–34) and *Illustrations of Taxation* (5 vols., London 1834) she attempted to embody in stories and fables the leading doctrines of Malthus and Ricardo. These stories were praised by some critics for their vividness and interest and attacked by others, both because they showed signs of hasty compilation and inadequate economic knowledge and also because instead of genuinely illustrating in plot and action the working of economic laws they merely incorporated a mass of economic material in the form of more or less irrelevant dialogues and disquisitions. Nevertheless, they were immensely popular and influential with the general public.

In 1834 Harriet Martineau went for a two years' visit to America, where she incurred great unpopularity by her open support of abolitionism. Her opposition to slavery led her to question the laissez faire assumptions upon which her economics had been based, and in *Harriet Martineau's Autobiography* (written about 1855, published in 2 vols., Boston 1877, with memorials by Mrs. M. W. Chapman) she gave expression to utopian views regarding the prospects of social reconstruction.

LINDLEY M. FRASER

Consult: Miller, Mrs. F. Fenwick, *Harriet Martineau* (London 1884); review article in *Edinburgh Review*, vol. lvii (1833) 1–39, and in *Quarterly Review*, vol. xlix (1833) 136–52; Escher, Elisabeth, *Harriet Martineaus sozialpolitische Novellen* (Weida 1925); Bosanquet, Theodora, *Harriet Martineau: an Essay in Comprehension* (London 1927).

MARTINEAU, JAMES (1805–1900), English divine and philosopher. Martineau was born in Norwich of a family originally sprung from Huguenot refugees. After a period of training as a civil engineer he decided to prepare for the nonconformist ministry. By lifelong conviction he was a Unitarian Christian and theist, and in Liverpool and London he exercised extraordinary influence as a preacher and writer on religious philosophy.

Martineau was influenced through both sympathy and opposition by most of the leaders of English thought in the nineteenth century and enjoyed personal relations with many of them. In particular Herbert Spencer in England and Comte in France afforded the opposition needed to stimulate the critical development of his own thinking, which finds its most systematic and elaborate exposition in his three greatest works, *Types of Ethical Theory* (2 vols., Oxford 1885; 3rd ed. 1889), *A Study of Religion* (2 vols., Oxford 1888; 2nd rev. ed. 1889) and *The Seat of Authority in Religion* (London 1890, 5th ed. 1905). Deity was to Martineau a concrete per-

sonal being ruling the universe and holding moral relations with mankind; and God and the soul were to him two absolutely self-luminous truths, which formed the controlling center of all his critical and constructive work in theology and philosophy. For him the interpretation of man is the interpretation of the universe; and what is essential in man is reason, conscience and will. Accordingly after an examination and rejection of the claims of infallible churches and infallible books he finds the seat of authority in the reason and conscience of man, not of any individual man but of mankind. His religion was what he believed the personal religion of Christ to have been. Christ he regarded as an ideal to be reverenced and followed rather than an authority to be worshiped. What the present day reader misses in these works is any adequate discussion of the problems arising out of the origin, development and historical organization of religion and morality; but these questions came to the front after Martineau's principal work as a thinker was done. His moral philosophy is of the historical English type—a patient analysis of the form and nature of the moral consciousness itself, which he carries out with brilliancy and insight. But his interpretation has been widely criticized on the ground that it is no longer possible to maintain a theory of conscience as a special faculty, making its pronouncements immediately and without reflection upon circumstances and consequences, stations and duties. Martineau has but slight sympathy with the emphasis on the social aspect of morality, which looms so largely in recent moral philosophy of both the evolutionary and the idealistic types; but his theory of conscience as judging upon the comparative moral worth of our springs of action leaves room for a far reaching recognition of moral development in its personal and indirectly in its social aspects.

S. H. MELLONE

Consult: Drummond, J., and Upton, C. B., *Life and Letters of James Martineau*, 2 vols. (London 1902); Sidgwick, H., *Lectures on the Ethics of T. H. Green, Mr. Herbert Spencer, and J. Martineau* (London 1902); Carpenter, J. E., *James Martineau, Theologian and Teacher* (London 1905); Mellone, S. H., "Unitarianism of J. Martineau" in *The Price of Progress, and Other Essays* (London 1924) ch. vi.

MARTÍNEZ DE LA MATA, FRANCISCO, seventeenth century Spanish mercantilist. In his *Memorial . . . en razón del remedio de la despoblación, pobreza y esterilidad de España* (n.p. 1650, reprinted in Campomanes' *Apéndice*, vol. i) Martínez anticipated List to some extent by demonstrating the advantages of the coordinate development of agriculture and industry. He was swayed, however, by the superior profitableness of industrial improvement, observing that in agriculture labor merely collaborates with nature and does not increase the natural value of products of the soil, while in industry labor enhances the value of the product a hundredfold. In typical mercantilist fashion Martínez reckons Spain's loss from the abandonment of her industries as the difference between the value of raw materials and that of imported finished goods. The major portion of the *Memorial* is a diatribe against the use of foreign manufactures. The author holds foreign competition responsible for the depopulation and poverty of Spain, declaring that Spaniards have become vassals of other nations, since they pay a price for imported goods which includes a tax levied by a foreign sovereign. Foreigners are thereby enriched and enabled to make war on an impoverished Spain. Maintaining the self-sufficiency of Spain in technological skill as well as in raw materials he advises the expulsion of foreign workers, for they displace native labor and export treasure; but he urges Spaniards to imitate their thrift and industry.

The restoration of industry through the establishment of a prohibitive system would bring back to Spain the prosperity characteristic of the first years after the discoveries, when the specie of the Indies was exchanged directly for national products. Martínez describes money as "the soul which pervades and enlivens all the members of the body politic." Although he gives exaggerated figures on the export of precious metals and its consequences he shows clearly that it would be idle to try to restore prosperity and replenish the national treasury without restoring the arts. He praises conspicuous consumption and the use of luxuries, if manufactured at home, as means of increasing the circulation of money and creating work.

ROBERT S. SMITH

Consult: Conde de Campomanes, Pedro, *Apéndice a la educación popular*, 4 vols. (Madrid 1775–77) vol. i, p. 433–500; Sempere y Guarinos, Juan, *Biblioteca española económico-política*, vol. iii (Madrid 1804) p. 158–291.

MARTÍNEZ MARINA, FRANCISCO (1754–1833), Spanish historian and jurist. Martínez Marina, a member of the clergy, took a prominent part in politics as a fervent liberal, for which he suffered persecution in 1814 and 1823.

The scope and the scholarly character of his historical production as well as the fact that it is still highly authoritative entitle him to be considered the creator of the historiography of Spanish law. In order to provide a prologue for the edition of the *Siete partidas*, the code of Alfonso X, which was planned by the Real Academia de la Historia, he wrote his *Ensayo histórico-crítico sobre la antigua legislación y principales cuerpos legales de los reynos de León y Castilla* (Madrid 1808; 2nd ed., 2 vols., 1834); because of its comprehensiveness and thorough documentation this work constitutes the most valuable contribution to the historiography of the municipal charters and the mediaeval juridical institutions of León and Castille. The enthusiasm for liberalism which is often evidenced in this work aroused objections on the part of some of the academicians and as a result it was published separately by its author. Martínez Marina wrote his *Teoría de las cortes* (3 vols., Madrid 1813; vols. ii iii 2nd ed. 1820) to defend his belief in constitutional government and to demonstrate against the affirmations of the absolutists that the parliamentary regime was not an outlandish innovation in Spain but that its introduction implied a restoration of the mediaeval political doctrines which had been suppressed by the foreign Hapsburg and Bourbon dynasties. His liberalism, however, carried him too far. When he declared that the origin of the Castilian Cortes is to be traced back to the national councils of Visigothic Spain he established the classic theory of the subject, but his view is totally inadmissible. Nevertheless, the work is of great value. Both in this and in the earlier study Martínez Marina suggested measures for combating poverty, the origins of which he found in the unjust and unequal division of the land and the products of the soil. He therefore advocated land redistribution, particularly by means of an intensive policy of disentailment of ecclesiastical estates, the occupant to hold the land from the state subject to payment of a modest fee for its use. Martínez Marina made interesting contributions to philology and numismatics. He is responsible also for a very severe but well documented criticism of the *Novísima recopilación*, the revised code of 1805. He charged that it lacked order, method and exactitude, included contradictory, antiquated and irrelevant laws and omitted legislation that should have been included.

JOSÉ OTS Y CAPDEQUI

Other important works: *Juicio crítico de la Novísima recopilación* (Madrid 1820); *Ensayo histórico de las lenguas señaladamente del romance castellano*, Real Academia de la Historia, Memorias, vol. iv (Madrid 1852); *Antigüedades hispano-hebreas convencidas de supuestas*, Real Academia de la Historia, Memorias, vol. iii (Madrid 1852).

Consult: Ots y Capdequí, José, "Los más grandes cultivadores de la historia del derecho español" in Universidad de Valencia, *Anales*, vol. iv (1923–24) 117–59; Bécker, J., *La tradición política española* (Madrid 1896); Costa y Martínez, J., *El colectivismo agrario en España* (2nd ed. Madrid 1915) p. 216–21.

MARTINOVICS, IGNÁCZ JÓZSEF (1755–95), Hungarian Franciscan, scientist, philosopher and political reformer. After having taught mathematics in the Franciscan School at Pest Martinovics became an army chaplain. In 1781 he set out on a tour of western Europe. During his sojourn in Paris he became imbued with the advanced political ideas then current among French intellectuals. From 1784 he taught physics at the University of Lemberg and seven years later was appointed court chemist by Leopold II. The liberal and reforming emperor, who like all the Hapsburgs followed the motto *Flectere si nequeo superos, Acheronta movebo*, employed the assistance of Martinovics against the Hungarian feudal class, which was thwarting his reform program.

When Leopold died in 1792 and was succeeded by the reactionary Francis II, Martinovics lost his position in the government and continued his political activity independently. In 1794 at the request of the Parisian Jacobin Club and for the purpose of promoting the ideas of the French Revolution in Hungary Martinovics organized two Masonic secret societies, in which he succeeded in including a large proportion of the influential Hungarian adherents of reform. At the same time he published a number of pamphlets, among them *Catéchisme de l'homme et du citoyen* (Vienna 1794), developing the doctrines of legal equality and republicanism on which the clubs were founded. Before revolutionary action was even attempted Martinovics and his associates were executed for treason in 1795; but in spite of its failure the Martinovics conspiracy, as it became known, was the chief ideological forerunner of the March days of 1848. Although recent investigators have substantiated Martinovics' duplicity and his willingness to serve the reaction, Hungarians still regard him as the first to echo the western ideas of freedom.

RUSZTEM VAMBÉRY

Other important works: *Oratio ad proceres et nobiles*

regni Hungariae (n.p. 1790; rev. Hungarian ed., n.p. 1791); *Testament politique de l'empereur Joseph II*, 2 vols. (Vienna 1791); *Oratio pro Leopoldo II* (n.p 1792); *Status regni Hungariae anno 1792* (n.p., n.d.); *Systema universae philosophiae* (n.p. 1781).

Consult: Marczali, H., "Die Verschwörung des Martinovics" in *Ungarische revue*, vol. i (1881) 11–29; Gerando, A. de, *De l'esprit public en Hongrie depuis la Révolution française* (Paris 1848); Fraknói, Vilmos, *Martinovics és társainak összeesküvése* (The conspiracy of Martinovics and his associates) (2nd ed. Budapest 1884); Pulszky, F., *Martinovics és társai* (Martinovics and his associates) (2nd ed. Budapest 1907); Szirmay, A., *A magyar Jakobinusok története* (The history of the Hungarian Jacobins) (Budapest 1889); Concha, G., *A reformeszmékről az 1790 körüli években* (The efforts at reform about the year 1790) (Budapest 1895); Fraknói, Vilmos, *Martinovics élete* (Life of Martinovics) (Budapest 1921), with bibliography p. 213–22.

MARTINUS. *See* FOUR DOCTORS.

MARTOV, L. (Yuly Osipovich Zederbaum) (1873–1923), Russian socialist leader. Born in Constantinople of Russian Jewish parents, Martov turned revolutionary in 1891, the year of his admission to the University of St. Petersburg. From 1893 to 1895, while exiled at Vilna, he worked in the Jewish labor movement; at that time he formulated a theory justifying the separate organization of Jewish workers into a Marxian mass party, which was later the basis of the Bund. Upon his return to St. Petersburg he joined Lenin in founding the League of Struggle for the Emancipation of the Working Class. After three years of exile in Siberia he went abroad and with Lenin, Potressoff and Plekhanov's group edited the paper *Iskra* (The spark, 1900–05) established to fuse under Marxian leadership the heterogeneous revolutionary labor groups in Russia. At the second congress of the Russian Social Democratic Labor party in London in 1903 Martov led the opposition to Lenin's attempt to turn the party into a rigidly centralized organization dictatorially ruled by groups of professional revolutionaries and urged the building of a democratically organized self-governing proletarian party on the German model.

This was the beginning of the breach between the Menshevik and Bolshevik wings of the party, with their radically different conceptions of the character of the Russian Revolution, the role in it of the proletariat and the tactics of a proletarian party. During the 1905 revolution Martov was chief editor of the Social Democratic papers in St. Petersburg; in 1906–07 he worked with the Social Democratic representation in the First and the Second Duma; upon the collapse of the revolution he fought against extremism among the Mensheviks who wished to "liquidate" all underground revolutionary organizations and against anarchist-terrorist tendencies among the Bolsheviks. During the World War he opposed the war policies of the majority socialist parties in Europe and was one of the founders and leaders of the "internationalist" wing of the socialists, and at the international socialist conferences at Zimmerwald and Kienthal he occupied in opposition to Lenin a centrist position, advocating proletarian pressure to bring about peace without victory. Returning to Russia in May, 1917, too late to prevent the creation of a socialist-bourgeois coalition government, he led the internationalist minority of the Mensheviks who fought against the policies of the Kerensky government and insisted on a vigorous struggle for immediate peace and proposed a coalition government of all socialist parties including the Bolsheviks. In October, 1917, after the seizure of power by the Bolsheviks he continued his struggle for a socialist coalition; the plan gained the support of the workers and even the sympathy of some Bolshevik leaders but its progress was blocked by the stubborn resistance of Lenin and Trotsky. In the following years Martov urged the democratic observance of the Soviet constitution and condemned the tightening dictatorship and the terrorism of the Communist party; in 1918 in the period of "red terror" he published a pamphlet protesting vigorously against the re-establishment of capital punishment by the courts. At the same time he opposed armed resistance to the regime as likely to lead to internecine warfare and counter-revolution and supported the government against the "Whites" and foreign intervention. Regarding the revolution as essentially petty bourgeois and anti-feudal but radically affected by the presence of a numerous proletariat and the increasingly acute crisis of international capitalism, Martov held that objective conditions required the democratization of the Soviet regime and the gradual transformation of Russia into a democratic socialist republic based on an amicable collaboration between the urban proletariat and the freely organized peasantry. Although he was never molested personally, open political activity in Soviet Russia was made increasingly difficult for him; after the repression of the Social Democratic party by the Soviet government he went

abroad in November, 1920, and founded in Berlin the *Sotsialistichesky vestnik* (Socialist courier), which he directed until his death. He was also active in the reestablishment of the Socialist International, which had been disorganized during the war. He was one of the leaders of the so-called Vienna International (1921–23), and in the statutes of the Second International, which was founded after his death, were embodied the "Martov points" establishing the Socialist International as "the highest appeal for all socialistic parties, not only in war but also in peace."

Martov was a keen thinker and brilliant journalist. He was one of the editors of a four-volume history of the 1905 revolution and was also the author of a number of works on the history of the revolutionary and labor movements in Russia.

R. ABRAMOWITSCH

Important works: *Obshchestvennie i umstvennie techeniya v Rossii 1870–1905 godov* (Social and intellectual currents in Russia in 1870–1905) (Leningrad 1924); *Istoriya rossiyskoy sotsial-demokratii* (2nd ed. Moscow 1923), tr. by A. Stein with supplement by Th. Dan as *Geschichte der russischen Sozialdemokratie* (Berlin 1926); "Razvitie krupnoy promishlennosti i rabocheye dvizhenie do 1892 goda" (Development of large scale industry and the labor movement to 1892), and "Razvitie promishlennosti i rabocheye dvizhenie s 1893 do 1903 goda" (Development of industry and the labor movement from 1893 to 1903) in *Istoriya Rossii v XIX veke* (History of Russia in the nineteenth century), 9 vols. (St. Petersburg 1907–11) vol. vi, p. 114–62, and vol. viii, p. 67–156; *Mirovoy bolshevizm* (World Bolshevism) (Berlin 1923).

Consult: *Sotsialistichesky vestnik* (Socialist herald), vol. iii (1923) special issue of April 10, 1923, and no. 8–9, and vol. iv (1924) no. 7–8; Abramowitsch, R., "Julius Martow und das russische Proletariat" in *Kampf*, vol. xvi (1923) 180–88.

MARX, KARL (1818–83), social philosopher, revolutionary leader and founder of the chief current in modern socialism. Marx took as his starting point the great transformation which had occurred in Europe in the period preceding 1830 as a result of the industrial revolution in England, the political revolution in France and the intellectual revolution in Germany. Theoretically this transformation has found its definitive expression in the political economy of Smith and Ricardo, the writings of the historians of the French Revolution and Restoration and the German idealist philosophy from Kant to Hegel. It was the Hegelian philosophy that exerted the first lasting influence upon the youthful Marx, who combined idealistic striving with a keen thirst for reality and together with other "left Hegelians," particularly Bruno Bauer, Arnold Ruge and Ludwig Feuerbach, set out to interpret this philosophy in a militant, atheistic and revolutionary spirit. Under the influence of these ideas he wrote in 1839–41 his doctor's dissertation on the materialistic philosophy of Epicurus and its theological criticism by Plutarch.

Instead of devoting himself to an academic career as he had originally intended, Marx turned to journalism, first as contributor and later as editor of the *Rheinische Zeitung*, an organ of the radical bourgeois opposition which was established in 1842 and suppressed fifteen months later. The practical lesson in the importance of so-called "material interests" derived from this journalistic experience coupled with the final upsetting of his original Hegelian idealism by Feuerbach's philosophy of real humanism led Marx to submit the speculative idealism of Hegel and of his left followers to a critical revision. His investigations, the results of which he embodied in part in the articles "Zur Kritik der hegel'schen Rechts-Philosophie" and "Zur Judenfrage" (in *Deutsch-französische Jahrbücher*, ed. by Marx and Ruge, Paris 1844, p. 71–85, and 182–214), led him to conclude that "legal relations and political forms cannot be conceived as autonomous phenomena nor as manifestations of the so-called general unfolding of the human spirit. They are rather rooted in the material conditions of life which Hegel after the fashion of the English and French of the eighteenth century summed up under the name civic society; the anatomy of this civic society is to be sought in its economics." Upon this realization Marx embarked in 1844 on the study of economics in Paris and after being expelled from France continued it in Brussels until the spring of 1848. A second attempt at political activity in Germany in 1848 having been cut short by the reaction following the revolutionary movement in the autumn of 1849, Marx resumed his studies in London, where he continued them unremittingly through the prolonged misery of an emigrant's life until his death.

The most important results of this phase of Marx' theoretical work are contained in the philosophical and economic manuscripts written in 1844 in Paris (first published in the *Gesamtausgabe*, pt. i, vol. iii, Frankfort 1932); in *Misère de la philosophie* (Brussels 1847; tr. into German by E. Bernstein and Karl Kautsky, Stuttgart 1885; tr. into English by H. Quelch, Chicago

1910) written in reply to Proudhon's chief economic work *Système des contradictions économiques, ou philosophie de la misère* (2 vols., Paris 1846); and, finally, in *Zur Kritik der politischen Ökonomie* (Berlin 1859; tr. by N. I. Stone from 2nd German ed., New York 1904), which represents the first two chapters of a manuscript intended to cover the entire field of economics. This gigantic work of 1472 pages arranged in twenty-three books was completed between August, 1861, and June, 1863, but has never been published. Its place was taken by another work, planned on a less comprehensive scale, which was intended to consist of four volumes under the title *Das Kapital*. Of these only the first volume was completed and published in two different editions by Marx himself (Hamburg 1867, 2nd ed. by Marx 1873, 4th ed. by Engels 1890; French translation revised by Marx, Paris 1875; English translation by S. Moore and E. Aveling with a preface by Engels, 2 vols., London 1887; new English translation by E. and C. Paul, London 1928). The second and third volumes were edited by Engels from unpublished manuscripts (Hamburg 1885–94; tr. by E. Untermann, London 1907–09). As a substitute for the fourth volume, which was planned as a history of economic doctrines, Karl Kautsky compiled his *Theorien über den Mehrwert* (3 pts., Stuttgart 1905–10) from the original manuscript of *Zur Kritik der politischen Ökonomie*.

The essential theoretical achievement of Marx does not lie, as many believed, in the formulation of a new system of political economy on the basis of the classical concept of labor value and the socialistic conclusions drawn from it by the immediate successors of Ricardo, but rather in his radical criticism of the very principles of political economy and in his application of the so-called materialistic conception of history in the discovery of developmental laws of modern capitalistic economy. This new method of a science of history and society strictly empirical in procedure and Hegelian-dialectic in conceptual structure is the joint product of Marx and Engels. Until 1844 they each worked out independently the essential elements of this method. From that time until 1848 they gave it a more precise formulation in a series of joint critical and programmatic works: *Die heilige Familie* (Frankfort 1845) written against Bruno Bauer; *Die deutsche Ideologie* written in 1845–46 in Brussels against Bauer, Stirner, Feuerbach and the so-called German, or true, socialism (first published in *Gesamtausgabe*, pt. i, vol. v, Berlin 1932); and the *Manifest der kommunistischen Partei* written in 1847–48 (London 1848; numerous later editions and several English translations entitled *The Communist Manifesto*). After 1848, while constantly exchanging opinions and continuing in essential agreement, the two independently applied the materialistic principle to the various domains of the economic, political and cultural life of modern bourgeois society and its antecedent stages.

Of equal importance with Marx' theoretical achievements is his work as a political and revolutionary leader. Within this realm Marx' effort presents two aspects. On the one hand, Marx as early as 1843 was in close contact with the most progressive manifestations of contemporary French socialism and communism. With Engels he founded the Deutscher Arbeiterbildungsverein in 1847 in Brussels. Soon afterward they joined the first international organization of the militant proletariat, the secret Bund der Kommunisten, at whose request they wrote the manifesto, in which they explicitly proclaimed the proletariat as "the only revolutionary class." On the other hand, during the actual revolutionary outbreak in 1848 Marx, then the editor of the *Neue rheinische Zeitung*, expressed views which while extremely radical and revolutionary yet essentially expressed the demands of bourgeois democracy. Only in the last months before the suppression of the paper in May, 1849, did he begin to emphasize proletarian class interests and this only in a rather abstract manner. Similarly in his publicistic activity during the revival of democratic movements of the late 1850's and 1860's in his numerous articles in Horace Greeley's New York *Tribune*, in the *New American Cyclopedia* edited by George Ripley and Charles A. Dana, in Chartist publications and in German and Austrian newspapers Marx revealed himself chiefly as a spokesman of the radical democratic policies which, he hoped, would ultimately lead to a war of the democratic west against reactionary czarist Russia.

The explanation of this apparent dualism is to be found in the revolutionary doctrine patterned along Jacobin traditions which Marx and Engels adopted before the February Revolution of 1848, and to which they remained on the whole faithful even after the outcome of this revolution resulted in the breakdown of their hopes, although they realized the necessity of adjusting tactics to changed historical conditions and new practical experiences. This peculiar

Marxian theory of revolution, asserting the historico-transitional character of the working class movement which proceeds to the realization of its own proletarian revolutionary objectives and methods of class struggle through the bourgeois revolution, was rehabilitated in the twentieth century by the Russian Marxists, above all by the orthodox Marxist Lenin, who based upon it the theory and strategy of Bolshevism. The original Marxian theory of revolution, revived by Lenin, has been opposed by the other great branch of contemporary Marxism: since the end of the 1890's and more consciously since the World War social democrats who believe in reaching socialism through economic and political reforms have asserted that Marx and Engels, impressed with the rise of strong, independent class conscious labor organizations, began to drop their old radical theory of political revolution and to advocate an evolutionary policy based on the immediate defense of specific labor interests. Both the old and the new revolutionary syndicalism also have claimed certain elements of Marx' doctrine in justification of their own tendency to replace political action by direct economic action in the proletarian class war.

It is true that economic activity of trade unions and other forms of championing immediate specific labor interests acquired for Marx greater importance in his later years, as attested by his leading role in the organization and direction of the International Working Men's Association as well as by his contribution to the programs and tactics of the various national parties. But it is also true and it is clearly shown by his energetic battles within the International waged against the adherents of Proudhon and Bakunin that Marx had not abandoned his earlier views on the decisive importance of political action in the process of proletarian revolution. The most important documents which reveal this aspect of the later development of Marx' revolutionary theory of class struggle are his inaugural *Address and Provisional Rules of the International Working Men's Association* (London 1864) and the statute of the International; his essay *Civil War in France* (translated by E. Belfort Bax, London 1871; first published in *Volksstaat*, 1871), delivered as an address to the General Council of the International; his commentary on the 1875 program of the German Labor party (first published in *Neue Zeit*, vol. ix, 1891, no. 18; English version as *The Gotha Program*, ed. by Daniel De Leon, New York 1922); and the declaration of principles which Marx wrote for the program of the Guesdist Parti Ouvrier Français (1880; published in Guesde, Jules, and La Fargue, P., *Le programme du Parti ouvrier*, Paris 1883). For a further elaboration of the specific elements in Marx' system of thought see MATERIALISM; CLASS STRUGGLE; SOCIALISM; ECONOMICS, section on SOCIALIST ECONOMICS; COMMUNIST PARTIES; SYNDICALISM.

KARL KORSCH

Works: *Marx-Engels historisch-kritische Gesamtausgabe*, pt. i, vols. i–ii, pt. iii, vols. i–iii (ed. by D. Ryazanov, Berlin 1927–30), pt. i, vols. iii–vi, pt. iii, vol. iv (ed. by V. Adoratsky, Berlin 1931–32) have appeared so far; they contain the most complete collection of works written by Marx before 1846, some of them printed for the first time, and the complete correspondence between Marx and Engels for the years 1844 to 1883. Important incomplete collections, including writings of the later period not otherwise available, are: *Aus dem literarischen Nachlass von Karl Marx, Friedrich Engels und Ferdinand Lassalle*, ed. by Franz Mehring, 4 vols. (2nd ed. Stuttgart 1913); *Gesammelte Schriften von Karl Marx und Friedrich Engels, 1852 bis 1862*, ed. by D. Ryazanov (D. B. Goldendach), 2 vols. (2nd ed. Stuttgart 1920), covering the years 1852 to 1856. The larger works published by Marx or, after his death, by Engels are available in new editions or recent reprints as well as in English translation. Important partial publications of letters are the following: *Briefe und Auszüge aus Briefen von Joh. Phil. Becker, Jos. Dietzgen, Friedrich Engels, Karl Marx u. A. an F. A. Sorge und Andere*, ed. by F. A. Sorge (Stuttgart 1906) pt. i; *Briefwechsel Lassalle-Marx*, ed. by Gustav Mayer (Berlin 1922); Marx, Karl, *Briefe an Kugelmann*, with an introduction by N. Lenin (Berlin 1924); *Die Briefe von Karl Marx und Friedrich Engels an Danielson (Nikolai-on)*, ed. by K. Mandelbaum, Neudrucke marxistischer Seltenheiten, no. 3 (Leipsic 1929).

Consult. Mehring, Franz, *Karl Marx* (4th ed. Leipsic 1923); Ryazanov, D. (D. B. Goldendach), *Marks i Engels* (Moscow 1923), tr. by J. Kunitz as *Karl Marx and Friedrich Engels* (New York 1927); *Karl Marx, Man, Thinker, and Revolutionist*, ed. by D. Ryazanov (D. B. Goldendach) (London 1927); Mayer, Gustav, *Friedrich Engels*, 2 vols. (Berlin 1933). On the philosophy of Marx: Labriola, Antonio, *Discorrendo di socialismo e di filosofia* (2nd ed. Rome 1902), tr. by Ernest Untermann as *Socialism and Philosophy* (Chicago 1907), and *Del materialismo storico* (2nd ed. Rome 1902), tr. by C. H. Kerr as *Essays on the Materialistic Conception of History* (Chicago 1904); Plekhanov, G., *Osnovnie voprosi marksizma*, ed. by D. Ryazanov (2nd ed. Moscow 1928), tr. by E. and C. Paul as *Fundamental Problems of Marxism* (London 1929); Lenin, N., *Materializm i empirio-krititsizm*, vol. xiii of his *Sochineniya* (2nd rev. ed. Moscow 1928), tr. by David Kvitko and Sidney Hook as *Materialism and Empirio-criticism*, vol. xiii of his *Collected Works* (New York 1927). On the economics of Marx: Engels, Friedrich, "Vorwort" in Marx, Karl, *Das Elend der Philosophie* (9th ed. Stuttgart 1921) p. v–xxiii, tr. by H. Quelch in Marx' *The Poverty of Philosophy* (Chicago 1910) p. 9–27; Engels, Friedrich,

"Vorwort" in vol. ii of Marx' *Das Kapital* (Hamburg 1885) p. iii–xxiii, tr. by Ernest Untermann in Marx' *Capital*, vol. ii (Chicago 1909) p. 7–29; Korsch, Karl, "Geleitwort" in his edition of Marx' *Das Kapital* (Berlin 1932) p. 5–33. On Marx' work in current history and politics: Ryazanov, D. (D. B. Goldendach), "Karl Marx über den Ursprung der Vorherrschaft Russlands in Europa" in *Neue Zeit*, supplement no. v (1909), and "Karl Marx und Friedrich Engels über die Polenfrage" in *Archiv für die Geschichte des Sozialismus und der Arbeiterbewegung*, vol. vi (1916) 175–221. For critical estimates of Marx' system see: Bernstein, E., *Die Voraussetzungen des Sozialismus und die Aufgaben der Sozialdemokratie* (Stuttgart 1899), tr. by E. C. Harvey as *Evolutionary Socialism* (London 1909); Sorel, G., *La décomposition du marxisme* (2nd ed. Paris 1910); Korsch, Karl, *Marxismus und Philosophie* (2nd ed. Leipsic 1930); Hook, Sidney, *Towards the Understanding of Karl Marx* (New York 1933).

For a comparatively complete bibliography of Marx' works see Drahn, Ernst, *Marx-Bibliographie* (2nd ed. Berlin 1923). A useful record, although not without errors and omissions, of the non-Russian literature on Marx published from 1914 to September, 1925, is Czóbel, E., and Hajdu, P., "Die Literatur über Marx, Engels und über Marxismus seit Beginn des Weltkriegs" in *Marx-Engels Archiv*, vol. i (1925) 467–549.

MASCOV, JOHANN JACOB (1689–1761), German historian. After studying at Leipsic and traveling through France, England and Italy Mascov received his degree of doctor of laws from the University of Halle in 1718. The following year he was appointed professor of public law at the University of Leipsic. In 1741 he became municipal proconsul in Leipsic and he was for many years a member of the Saxon *Landtag*.

Scientific historical research as it gained ground after the decline of humanism, especially in France, and as it was developed by the Maurists was utilized above all in the field of ecclesiastical history. Mabillon, Tillemont, the abbé Fleury and Lecointe all worked upon themes in this field. Mascov took over their critical methods but employed them for a new subject, national history. While his German contemporaries, such as von Bünau, had a purely juristic interest in the development of the German kingdom and its law, Mascov in his *Geschichte der Teutschen bis zu Anfang der fränckischen Monarchie* (Leipsic 1726; tr. by T. Lediard, London 1737) traced the origins of the German nationality from its first contacts with the Romans in the Cimbrian war in order to show that the genius (*génie*) of the nation, whatever it might take over from foreign peoples, remains basically autochthonous. Where no authentic tradition existed, as in the case of the origin of the Germani, Mascov preferred to remain silent rather than to lose himself in vague fantasies. But he employed critically all available sources, including coins, inscriptions and monuments. He attached little importance either to "the beauty of interpolated speeches" or to miraculous tales of heroes found so frequently in the writings of humanistic historians, but stressed exactness and reliability of dates, which he determined by means of detailed citations and established by comparative study of the information contained in the sources. In his *Geschichte der Teutschen bis zu Abgang der merovingischen Könige* (Leipsic 1737; tr. by T. Lediard, London 1738) Mascov continued his work on German history from Clovis to Pepin (481–752), writing in the same scientific but vivid narrative style that had characterized his earlier volume. For this period his work had been preceded by that of the Frenchman Gabriel Daniel, who in his *Histoire de France* (1713) had purged Merovingian history of many fables.

With these histories Mascov brought to a certain measure of fruition that which for Leibniz had existed merely as a program or at most had remained in unpublished manuscript form. The two works quickly achieved an international reputation and were translated into French, English, Italian and Dutch. They were esteemed because of their almost Tacitean emphasis upon facts both in style and general conception. Nor did Mascov permit himself to be carried away by nationalistic excesses, as did the humanists. He only traced with amazement the way in which the Germanic tribes in conflict with the superimposed Roman culture "to a certain extent developed as a result of their very defeat." It was not until the time of M. I. Schmidt toward the end of the eighteenth century that there appeared another history of the Germans as readable as Mascov's.

After completing his German history Mascov wrote in Latin his *Commentarii de rebus Imperii romano-germanici* (3 vols., Leipsic 1741-53), which dealt with mediaeval history but went only as far as Conrad III. The remainder of his literary production consists of textbooks for academic instruction. His *Principia iuris publici Imperii romano-germanici* (Leipsic 1729, 5th ed. 1759) achieved such prestige that lesser authorities on public law, such as Börner, Stainhauser and von Ludewig, composed commentaries upon it. In this book he explained the German governmental organization and its law in terms of his-

torical development. Mascov's reputation brought him many students from foreign countries as well as from Germany and his excellence as a teacher caused his influence to be far reaching.

RUDOLF STADELMANN

Consult: Voigt, Georg, "Johann Jacob Mascov" in *Historische Zeitschrift*, vol. xv (1866) 327–58; Goerlitz, Waldemar, "Die historische Forschungsmethode Johann Jacob Mascovs" in *Leipziger Studien*, ed. by G. Buchholz, K. Lamprecht, E. Marcks, and G. Seeliger, vol. vii, pt. iv (1901); Treitschke, Richard, "Ueber Jakob Mascov und seine Zeit" in *Allgemeine Zeitschrift für Geschichte*, vol. viii (1847) 146–84; Wegele, F. X. von, *Geschichte der deutschen Historiographie*, Geschichte der Wissenschaften in Deutschland, Neuere Zeit, vol. xx (Munich 1885) p. 662–78, 683–87.

MASDEU, JUAN FRANCISCO (1744–1817), Spanish historian. Masdeu, a Jesuit, was compelled to leave Spain when his order was expelled by Charles III in 1767. Except for a brief interval in 1799 he lived in Italy until near the end of his life. Very much an eighteenth century Spaniard, he displayed in addition to wide and solid culture and critical ability a sometimes excessive fervor for things Spanish in the face of the Hispanophobia fostered by the *philosophes*. His works, which include critical, polemical and satirical writings, cover the fields of poetry, grammar, religion, canon law, politics, archaeology and sacred biography. But he stands out particularly as a historian. His celebrated *Historia crítica de España y de la cultura española* (20 vols., Madrid 1784–1805; vols. i-ii first published in Italian, Foligno and Florence 1781–87) has been termed by Menéndez y Pelayo "an extraordinary work, an outstanding monument of scholarship and patience." Its contents nevertheless are of uneven merit and many of its statements have been severely attacked. The author's pronounced critical spirit becomes an exaggerated iconoclasm when turned against persons and institutions not to his liking, and rather than remaining a history in a strict sense the work constitutes a complex mass of critical dissertations. In spite of its defects its appearance marks an important moment in the history of Spanish historiography. Besides being highly critical it abounds in valuable bibliographic and documental material and teems with suggestions; in it students seeking to clear up obscure points in the history of the nation have delved with profit. Although it does not go beyond the eleventh century it is still indispensable for the knowledge of certain periods. It sought to vindicate the Spanish nation and its culture, particularly before Italian opinion, and is thus an outstanding landmark in an ancient controversy. Moreover as a result of its motivation the work contains a highly important systematic attempt to discuss the national traits scientifically and often realizes the ample concept of the content of history which dominated the Enlightenment, and which Masdeu shared. In the sphere of ecclesiastical history the author's exaggerated nationalism led to a passionate defense of the discipline of the primitive Spanish church against the reforms of Cluny and the intrusions of the church of Rome. Hence the work was placed on the Index *donec corregitur* in 1826.

JOSÉ OTS Y CAPDEQUI

Other works: *Discurso sobre las pretensiones de la Francia, la libertad i la igualidad* (Valencia 1811); *Iglesia española* (Madrid 1841).

Consult: Elías de Molíns, A., *Diccionario biográfico y bibliográfico de escritores y artistas catalanes del siglo XIX*, 2 vols. (Barcelona 1889–95); Altamira y Crevea, R., *Psicología del pueblo español* (rev. ed. Barcelona 1917); Menéndez y Pelayo, M., *Historia de los heterodoxos españoles*, 3 vols. (Madrid 1880–82) vol. iii, bk. vi, p. 194–96.

MASON, GEORGE (1725–92), American statesman. Mason, a descendant of cavalier stock which emigrated during the Cromwellian period, was one of the wealthiest slave owning Virginia planters, having considerable interests in shipping and in western lands. Although like many of the Virginia landed gentry he strongly opposed, as early as 1764, extension of British control over the colonies he did not resist very actively until July, 1775, when he took Washington's vacated seat in the Virginia Convention. A man of broad classical culture and considerable oratorical powers, he had great influence in formulating the fundamental law of the United States. The declaration of rights which he wrote became a model for all American states as well as a source of the French Declaration of the Rights of Man and probably of the Declaration of Independence. Mason was one of the principal draftsmen of the Virginia constitution adopted June 29, 1776, which served as the model for most state constitutions adopted in 1776 and 1777. The Constitution of the United States of 1787 does not in a number of respects represent the point of view expressed by Mason in the convention which framed it. He was especially opposed to its provisions for centralization of powers, a single executive and the election of the executive by indirect popular vote and to the absence of a bill of rights. He failed to win

approval for the limitation of the slave trade and special protection of southern economic interests. A large holder of confiscated loyalist lands, he attempted to protect such titles against suit which might arise as a result of federal treaties. At the same time he opposed any property restriction on the franchise and favored giving to the central government power to issue paper money and to enact sumptuary laws.

Mason was one of three delegates who remained to the end of the convention and refused to sign the completed document. In the Virginia Ratifying Convention of 1788 he was a leader in fighting ratification and was instrumental in securing the endorsement of a long bill of rights, largely on the basis of which the first ten amendments, adopted in 1791, were formulated.

B. F. WRIGHT, JR.

Consult: Rowland, Kate Mason, *Life of George Mason*, 2 vols. (New York 1892), including speeches, public papers and correspondence; Nevins, Allan, *The American States during and after the Revolution* (New York 1924); Beard, Charles A., *An Economic Interpretation of the Constitution of the United States* (New York 1913) p. 127, 205.

MASON, OTIS TUFTON (1838–1908), American anthropologist. After graduating from Columbian College in Washington, D. C., Mason became head of its preparatory school and later curator of anthropology in the United States National Museum. He was not a field anthropologist; he felt that anthropology required classification to insure advancement by systematic study and to that end he gathered and ordered attractively for future generalization vast materials from anthropological literature, especially first hand observations by explorers. He was a pioneer in the cataloguing of the races of man; his list of several thousand American tribal names begun in 1873 was the basis of the *Handbook of American Indians North of Mexico*, published by the Bureau of American Ethnology (Bulletin no. 30, 2 vols., 1907–10). In his important contributions to the study of aboriginal technology he stressed the necessity of knowing in detail the materials and the methods of construction; his publications on basketry, weaving and other aboriginal arts became models for later work in this field. He defined invention in terms of changes in the material used and the thing invented, changes in the apparatus and processes employed and changes in the mind of the inventor and in society; he therefore applied the term not only to mechanical devices but to cultural processes, language, fine arts, social structures and functions, philosophies, creeds and cults. His discussion of the preparation of traps for the capture of animals among the Amerinds revealed the technical ingenuity and empirical psychological attitudes of the natives. In his study of the influence of environment upon human industries, in which he concluded that environment was the occasion—the conditioning mold—not the cause of specific industries he made a pioneer classification of the aboriginal culture areas of the Americas. He presented evidence of the fact that the symbolism of designs in primitive art varies in terms of the myths and culture of each tribe. His popular book on the participation of women in primitive culture dispelled the idea that women held a degraded status in primitive life and put forth the thesis that women since earliest times have specialized in the industrial arts while men engaged in the arts of war.

Many prominent anthropologists owe to Mason their first steps in unexplored fields of anthropology. The lucidity and charm of his widely read scientific writings make for their permanence.

WALTER HOUGH

Important works: *The Origins of Invention: a Study of Industry among Primitive Peoples* (London 1895); *Woman's Share in Primitive Culture* (New York 1894); "Aboriginal American Basketry: Studies in a Textile Art without Machinery," United States National Museum, *Annual Report, 1902* (1904); "Influence of Environment upon Human Industries or Arts" in Smithsonian Institution, *Annual report of the Board of Regents 1895* (Washington 1896) p. 639–65.

Consult: Hough, Walter, in *American Anthropologist*, n.s., vol. x (1908) 661–67; Hrdlička, Aleš, in *Science*, n.s., vol. xxviii (1908) 746–48.

MASONRY, the most widespread fraternal order in the world, dates authentically from the foundation of the Grand Lodge of England on St. John Baptist's day 1717 by the union at London of four or more preexisting lodges. These local lodges, which were more or less numerous throughout Great Britain and Ireland even at that date, arose through the gradual transformation of the guilds of operative Masons into societies of non-Masons, for the promotion of sociability, conviviality and ideals of personal morality, equality, brotherhood and peace. The Masons' guilds, which developed during the long period of cathedral, monastery and abbey building from the twelfth century onward, are known to have been devoutly Christian, to have used the Bible in the reception of initiates or

apprentices and to have stressed fraternity and good work and the sacredness of the secret oath. The transformation from an operative to a speculative basis is accounted for by the decline of cathedral building and the rise of humanitarian and democratic theories during the seventeenth century. By the third quarter of that century lodges existed in which there were few, if any, operative Masons. With the decline of the practical advantages of the guild lodges, their already existent cult elements became of transcendent importance.

A remarkable feature of the old lodges was their mythology, which attributed the origins of Masonry to the times of Solomon, Noah or even Adam and traced the line of historical transmission therefrom. The first "Book of Constitutions" drawn up by James Anderson in 1723 on the basis of existing documents included considerable portions of this mythology. As slightly modified in 1738 this work still serves to give English Masonry its essential basis in the three degrees of the blue lodge—entered apprentice, fellow craft and master Mason. Nevertheless, the formation of the Grand Lodges of All England (York Rite) in 1725, of Ireland in 1726 and of Scotland in 1736, the continuance of various separate local lodges and the schism from 1751 to 1813 between the "Moderns," or adherents to the 1723 constitution, and the "Antients," or adherents to what was believed to be still older tradition, all served to perpetuate much individualism of ritual throughout the rapidly growing order. Even more important in accounting for the profuse efflorescence of myth, symbol and ceremony was the development in France after 1735 and later elsewhere of numerous degrees and branches of Scottish Masonry, superimposed on English Masonry, each new development accompanied by its authenticating story. Consequently many ingenious efforts have been made, even to this day, to prove that the order arose among the ancient Egyptians, Chaldees, Hindus, Greeks or Hebrews or that its symbols may be traced back to primitive societies. Few Masonic scholars now accept any of these views, which are almost universally looked upon as the romantic fantasies of wilful archaeologists.

Much the same may be said of the somewhat more realistic attempts to find origins in the Roman *collegia*, the Comacine Masters, the German Steinmetzen, the French compagnonnage and similar bodies. Striking similarities between these and the British Masonic guilds there undoubtedly were; and on the theory of cultural diffusion lineal connection is plausible. But thus far no satisfactory evidence has been found connecting Freemasonry with any mediaeval secret orders other than the English guilds. It seems certain that all lodges practising Masonry on the continent during the eighteenth century traced their lineage to one of the British lodges. Moreover no lodge of any time or place is recognized as regularly and officially Masonic which does not have this lineage.

The rapid spread of Masonry in the British Isles was due to the existence of local lodges, to the harmony between the ideals of Masonry and the new currents of religious and political thought and above all to the absence of an autocratic government and an absolutist church. The order was early sponsored by members of the nobility and thus given a social prestige appealing strongly to the successful members of the merchant, professional and literary classes. Its ideals of religious toleration based on an irreducible minimum of belief, personal and civic morality, liberty, equality and peace were essentially the ideals of the newly developing middle class; and its rapid diffusion is closely associated with the growth of trade, the spread of Protestantism and deism and the increased acceptance of liberal principles after the Revolution of 1688. These latter facts account for the opening of lodges throughout the world wherever English aristocrats, merchants, traders or governmental agents assembled. A not unimportant factor in this movement was the chartering of sea and field lodges with traveling warrants, begun by the Grand Lodge of Ireland in 1732 and generally adopted. Lodges were thus established wherever British military or naval forces were stationed.

The outstanding feature of the evolution of Freemasonry in the English speaking world has been the emergence of a high degree of order and system from the rivalries and chaos of the eighteenth century. In the first half of the century the grand lodges of England, Scotland and Ireland had each indiscriminately chartered lodges in the colonies and thus given rise to confusion of jurisdictions. After 1751 this had been aggravated by the rivalry between the Antients and Moderns, of which the former, less aristocratic in membership, were more favorable than the latter to colonial aspirations for independence. At the time of the American Revolution there are estimated to have been about 100 stationary and 50 military or movable lodges,

numbering among their members many generals of the army, signers of the Declaration of Independence and members of the Constitutional Convention. The thirteen or more colonial grand lodges, which before the end of the revolutionary era had chartered approximately 200 additional lodges, gradually declared themselves independent of their English antecedents and settled their conflicts of jurisdictions. At length the American system of one sovereign grand lodge in each state and the District of Columbia was clearly defined. A somewhat similar evolution has been followed in Canada and Australia, where there now exists one grand lodge for each province.

The period of conflicting jurisdictions was notable also for an extraordinary proliferation of degrees and rituals. The basic symbolism and primary degrees of Masonry are similar everywhere, but there have been so many independent jurisdictions and so many fertile inventors among its members that a bewildering variety of degrees and ceremonials has been engrafted upon the sturdy stock of Masonic myth and mysticism. Many new degrees were evolved, some of them more elaborate even than the thirty-three degrees of the Ancient and Accepted Scottish Rite. At the same time Masonry developed concordant orders, such as the Royal Order of Scotland and the Knights of the Red Cross of Rome and Constantine, and sponsored non-Masonic bodies to which only Masons are admitted, such as the Modern Society of Rosicrucians, the Sovereign College of Allied Masonic Degrees, the Veiled Prophets of the Enchanted Realm, the Ancient Arabic Order of Nobles of the Mystic Shrine and the Independent International Order of Owls. Various rites have become dormant or have died, and spurious and clandestine Masonic bodies have been organized by ambitious imitators.

This complex proliferation of forms resulted in a lack of unity of conception as to fundamental traits, which gave rise to the long discussion as to the "landmarks" of masonry. Some interpret these as immemorial practises; others as universal principles of Masonic jurisprudence; still others as ethical, religious or philosophical ideals which have imbued the order. While these differences persist, there is a reaction, in certain quarters, against explicit enumeration of landmarks with a tendency to identify them with any customs or principles serving to preserve the identity of the fraternity. In addition there are two major principles which are common to Masonry throughout the entire English speaking world—insistence on belief in a Great Architect of the Universe and non-participation in political controversy. The religious tenet is broadly interpreted. Jews and Christians of all shades of religious belief, spiritualists and mystics, deists and theists, Mohammedans, Buddhists and Confucians, are eligible. Only avowed atheists are excluded. A Chinese lodge chartered by the Grand Lodge of Massachusetts uses the Bible, the Koran and the writings of Confucius in its ceremonies.

Despite this indifference to religious issues the main opposition to Masonry has come from religious bodies. Protestant opposition, which on occasion has taken the form of interdenominational organization, has been mainly on grounds of secrecy, and always spasmodic and ineffective. Catholic opposition, more articulate and persistent, has stressed not only secrecy but the moral and religious features of Freemasonry as well. Catholic antagonism to English Masonry may be attributed primarily to the fact that in claiming to cultivate moral character and spiritual welfare, Masonry challenges the basic assumption of Catholicism that it is the guardian of morality and the sole depository of that revealed religion through which alone, it believes, true morality can be attained. Yet within recent years there has been little evidence of active Catholic opposition in any part of the English speaking world. In the United States the authority of the church has not even been sufficient to prevent a considerable number of men of Catholic affiliation from joining the Masonic fraternity. The strong insistence of English speaking Masonry on the ideal of brotherhood, on freedom of conscience and on toleration, as well as the absence of class, caste or race requirements in its standards of admission, has given it a breadth almost unique among social institutions, and has established its reputation as a promoter of sociability and the civic virtues, but without special religious significance.

Nor, except for the famous Morgan incident in New York, has there been any noteworthy political opposition to the fraternity. The abduction of William Morgan after it had become known that he was about to publish a book ostensibly revealing the secrets of Masonry was a factor in the formation in 1827 of the Anti-Masonic party, which flourished in New England and the middle Atlantic states during the following decade. The Morgan incident seems of itself to have aroused some popular apprehen-

sion, but the decline of the National Republican party and the general political discontent of the period made it a timely episode, the psychological value of which was skilfully utilized for political purposes by Thurlow Weed, William H. Seward and others. During this period, known in Masonic history as the era of the persecution, lodges in some areas were entirely eliminated and membership sharply declined throughout America.

With this exception English speaking Masonry has succeeded almost entirely in keeping itself free from partisan politics. An act of the British Parliament of July 12, 1798, for the suppression of secret societies expressly exempted the Masonic order, and since then the necessity of avoiding all reference to controversial issues in lodge sessions has been constantly reiterated. In the democratic atmosphere in which it has developed it has been able to avoid the secrecy of a subversive political society and has found any sort of political controversy a source of self-destruction. The indirect political influence of the society may, however, have been considerable. In all English speaking countries it has included within its ranks a large proportion of men prominent in public life and has cultivated in its membership ideals of liberty, equality, freedom of conscience, justice and square dealing.

Theories as to the purpose and essential nature of Freemasonry have manifested a wide diversity. Its ideology is by no means uniform and, as Roscoe Pound has suggested, has been heavily conditioned by the successive climates of opinion which it has encountered since the eighteenth century. The temple which Masonry is building is sometimes the symbol of moral character; sometimes the human soul as the dwelling place of the Most High; sometimes, with an external reference, a human brotherhood devoted to ideals of liberty, equality, truth and justice. Integration of ideology is still further retarded by the rapid increase in membership, the pressures of modern life and the insidious influences of the scientific outlook and of urban civilization.

While there has always been a tendency among Masonic writers to couch their views of the purposes of the organization either in rationalistic or mystical terminology, Masonry does not seek the advancement of a cult; it has no sovereign remedy for social ills and projects no social utopia. It cultivates sociability and practises mutual benevolence while devoting itself primarily to the prosaic and perennial task of encouraging the ordinary civic virtues. For the great body of members the attractions of the order are as varied as the range of human interests and psychic needs. There are direct and immediate practical profits and political, economic and social preferments as well as the more remote advantages of the Masonic mutual aid and philanthropies, especially homes for the aged and the orphaned. The basic appeal remains the spirit of fraternity, sociability and conviviality, reenforced by the personal satisfaction derived from membership in an extensive and respected organization. Closely associated therewith is the appeal of secrecy and of an ancient, recondite ritual.

The rapid spread of Masonry throughout continental Europe has evoked at various times romantic theories finding explanation of the diffusion in subtle and malicious intrigues for world domination on the part of Satan, the Jews, the Jacobites, the Rose Cross, the English or certain mysterious "unknown superiors." Catholics have seen in the order the work of the devil, but its persistent growth should make this theory distasteful even to the devout. Jews were not at first admitted to English lodges; their admission in Germany has never been generally approved; everywhere their numbers in the lodges have been small. The Jewish theory is merely another parallel of the myth of the Elders of Zion.

The Jacobite theory has given rise to endless research and controversy. It rests on the facts that after the dethronement of James II many of his supporters scattered to the continent, where they joined lodges or perhaps formed new ones; that many of his leading supporters were prominent Masons; and that the formation of the higher degrees which developed into Scottish Rite Masonry was begun in France following a famous address in 1737 by Chevalier Ramsay, known to have served the Pretender's family. Ramsay traced the origins of Masonry to a remnant of the Knights of St. John of Jerusalem who had found haven in Scotland. Thereafter Scottish Masonry rapidly expanded throughout central Europe. One of the most important Templar branches was the Order of the Strict Observance in Germany, which held the twin ideals of a universal Christian religion and a universal pontifical theocracy, was much imbued with magic, alchemy and necromancy and was generally believed to have served political purposes, possibly under Jesuit influences.

While the extent of Jacobite leadership in these developments is not yet clear, recent historians incline to the view that the higher degrees were not invented for ulterior political purposes but to satisfy the desire of the aristocracy and wealthy for distinction, and that the promotion of the cause of the Pretender was a minor influence in the rapid growth of the society. The influence of the Rose Cross is now recognized to have been slight and very probably limited to the introduction of additional mysteries and ideals of cult into the Masonry of Germany through the mediation of Wollner.

The true causes of the popularity of Masonry throughout Europe seem to have been its harmony with the spirit of the times, its diverse appeal at once to aristocrat and democrat, conservative and liberal, devout and free thinker, rationalist and lover of magic and esoteric rites. It was favored by the prestige of England, the attraction of visitors to London and the possession of Hanover by the English. Curiosity doubtless led many to join. Adopted by the upper classes, it became a key to personal promotion and to the satisfaction of vanity. More important were the appeals to the love of mystery in its myths, symbols, ceremonies, oaths, its secrecy and the obscurity of its phraseology. Its gradations and its pomp catered to the invidious distinctions of an aristocratic society. For many Masonry was a substitute for, or an addition to, their religion. Its insistence on belief in God and immortality (although German Masonry was Trinitarian), its use of the Bible and its emphasis on moral ideals appealed not only to devout Christians but to many types of faith in an age of universal intellectual awakening. Masonry arose with the beginnings of rationalism and free thought, when deism and "natural" as opposed to revealed religion were winning adherents, and it harmonized with the new and vital principle of religious toleration in a Europe weary of religious wars but not yet ready to break with theism or even with orthodox Christianity. This same diversity of appeal is shown in its political aspects, for whereas it was everywhere during the eighteenth century sponsored by the nobility, often by ruling houses, all identified with privileges of the feudal order, its spread concurred with the growth of middle class ideals of political and economic liberalism.

The growth of the order has been accompanied by the retention of a basic similarity amidst a profuse diversity. The similarity has been based on three traits: the three degrees of the early English lodges; ideals of liberty, equality and humanity; and, during the first century and a half, the minimum religious tenet. Unity in the latter respect was disrupted in 1877 when the Grand Orient of France replaced belief in God and immortality with complete freedom of conscience, thereby alienating various English, American, German and Scandinavian grand lodges.

Diversity has resulted from two conditions: individualism of organization and variations of cultural milieu. Although some psychological and institutional unity is achieved through the organization of local lodges into grand lodges, each of the more than one hundred grand lodges is wholly independent of all others. Moreover, while each grand lodge is usually supreme for its particular branch of Masonry in its own country, state or province, rival branches have been numerous and still operate in many territories. Spurious orders have not infrequently enjoyed periods of prosperity, while the mask of Masonry has often been used by ambitious adventurers or conspiring cliques.

The main key to Masonic history is to be found in the extent to which its religious and political ideals harmonized with those of the ruling forces in the countries to which it spread. The theory of English Masonry, that the lodge itself should take no action on political or religious questions but should leave to its members the practical application of the principles inculcated by Masonry, has been openly repudiated in many continental quarters. In northern Europe Masonry has usually been regarded, in keeping with the English tradition, as a bulwark of the established order, but elsewhere as the most implacable enemy of morality, religion and social order. The alternating periods of prosperity and persecution which it has undergone reflect broader religious and political currents and countercurrents. Curiously enough it has sometimes flourished under the favoring eye of autocrats and languished under the suspicious frowns of radical democracies. It was quite consistently patronized by the Hohenzollerns, it flourished in Austria under Joseph II and was utilized by the Napoleons in France, Italy and Spain but was nearly destroyed by the French Revolution and completely so by the Bolshevik revolution.

The career of Masonry in northern and central Europe has been strikingly different from that in southern Europe. Generally favored by the ruling houses in Germany and Scandinavia,

and recruited from the upper classes, its history in the eighteenth century is mainly that of the rivalries of the Rosicrucians, the Order of the Strict Observance, the Illuminati and the Swedish rite; the admixture of fresh mysteries; and the efforts of impostors to capture it for private ends. It played a part of uncertain importance in the promotion of the *Aufklärung* movement in Austria and Russia, and in Germany under the leadership of Lessing, Herder, Goethe and Fichte it served to popularize humanitarian and cosmopolitan ideals. During the nineteenth century a large section of German Masonry under the leadership of the Prussian lodges remained pillars of constitutional monarchy and Protestantism, while another became more humanitarian and liberal. Since the World War intransigent enemies of republican institutions have, with little show of reason, charged Masonry with most of the evils of the times and with unpatriotic connivance with the French.

In southern and eastern Europe as well as in Latin America Masonry, strongly under influence of the Grand Orient of France, has been much more secular and rationalistic. In the presence of autocratic government and authoritarian religion the order has frequently been accused of treasonable plottings, inflammatory propaganda, moral subversion and the promotion of magic, alchemy and other mysteries. Religious opposition began with the papal bull of 1738, in which the order was denounced because its secrecy promoted disloyalty and its religious toleration encouraged schism. Many similar denunciations have since followed, none more violent than those of 1873 and 1884 declaring Masonry to be founded and promoted by Satan and to be devil worship. Although the bulls of 1738 and 1751 were not registered by the *parlement* and remained without effect in France, they gave rise to proscriptive legislation in Italy and Spain and everywhere marked the beginning of the ceaseless warfare between Masonry and clericalism. In Catholic countries Masonry gradually acquired the character of a subversive secret society and active champion of modernism, secularism and democracy in opposition to all forces seeking a renewal of mediaeval theocracy. With the increasing power of the state over the moral and spiritual life of the people the clash of Masonic and clerical ideals has of necessity expressed itself in the field of politics.

It is as yet, however, impossible to be quite certain as to the extent and nature of the political activities of Masonic lodges in countries of Latin culture. Documentary evidence, such as it is, tends to destroy most of the myths which have until recently been generally accepted as to the role of Masonry in the French Revolution and subsequent uprisings in France, Spain, Portugal, Italy, Austria and Latin America. A major difficulty here is to distinguish the activities of Masonry as an organization from those of its members imbued with its spirit but acting as citizens of their respective countries. On practical issues there has usually been wide diversity of opinion among members, and the individual member is never bound by the majority opinion of his lodge. Moreover it has always been possible for certain lodges to advance causes not approved by the order as a whole. It is not always possible furthermore to distinguish legitimate from illegitimate lodges formed to advance factional causes by clandestine manoeuvres. It is therefore particularly difficult to reach any final conclusion regarding the highly controversial question of the role of Masonry in the French Revolution.

A few years after the fall of Robespierre the thesis was advanced that the revolution, including the Terror, was a part of a plot for world dominion fully formulated as early as 1785 by Masons and led by a mysterious group of adepts of the Bavarian Illuminati. This view gained ready and widespread acceptance and became one of the great historical myths of the last century. It rests mainly on the slender fact that the Illuminati, formed in 1776 by Weishaupt to combat Jesuit influences in Bavaria, had penetrated certain Paris lodges through the influence of Mirabeau and certain German emissaries. The actual influence of the Illuminati in France, however, seems to have been very slight. While popular for a brief period in Germany, enrolling many famous names, its number never exceeded a few thousand and its activities ceased, so far as authentic records go, after the final edict of dissolution in 1785.

The importance of Masonry for the revolution lies in another direction. After the formation of the Grand Orient in 1773 the order not only acquired great prestige through inclusion in its membership of a considerable portion of the socially élite but also became more militantly liberal, largely under the influence of the Neuf Soeurs lodge, which included the leading *encyclopédistes*, American sympathizers and kindred spirits. On the eve of the revolution there were over five hundred active lodges in France, be-

sides sixty-nine among the regiments. Its membership covered the whole range of opinion on public policies. It included, on the one hand, most of the promoters of the reform and liberal spirit, readers of Voltaire and Raynal, who deplored the evils inflicted on humanity by revealed religion and political autocracy; and, on the other, members of the privileged classes, nobility, venerables, deputies, magistrates and clergy (Martin, *La franc-maçonnerie française* . . . , p. 29). The order as such was neither atheistic nor antireligious; and there is no documentary evidence that the council of the order ever took any action to impose partisan political precepts on its members. While in January, 1789, it declared its adherence to the principle of representative government, it maintained loyalty to the king. Repeatedly asserting that liberty and equality were its basis, it seems, like the American Federalists, to have cherished a democracy only among the élite.

At the same time recent studies would seem to indicate that Masonry partly by concerted action of its lodges and partly through the activities of members imbued with its ideals played a leading role in the organized propaganda preceding and during the Estates General of 1789. More than one half of the deputies to that body were Masons and its committees were very largely dominated by them; the Club Breton, forerunner of the Jacobin Club, was composed largely of Masons. Careful documentary research points to Masonic influences in the preparation of the *cahiers*, the conduct of the elections, the financial support of reform propaganda, the organization of bureaus of correspondence, of the national guard and of patriotic societies to influence *petit bourgeois* and proletarian activity, and the penetration of administrative bureaus with reformism.

There is no evidence, however, that Masonry at any time shared the views later represented by the "republicans" of 1792; it sought reform without revolution. A large proportion of Masons subsequently became émigrés, while only eighteen lodges in all France remained to answer the call of the Grand Orient to renewed activity in 1797. In sum, French Masonry in 1789 was perhaps the chief rallying point of many currents of discontent, the center of organized propaganda for ideals which it did not create, which it alone could not have pushed to success but which might not have succeeded without its vigorous support. At the same time it was in fact less revolutionary than its precepts sounded and was far from intending the violent cataclysm which its activities assisted in unleashing.

During the nineteenth century French Masonry under the Grand Orient became gradually more democratic and anticlerical. It played a very minor role in the revolutionary movements of 1830 and 1848, but with the establishment of the Third Republic it openly and vigorously promoted the secularization of education, the suppression of all state appropriations for religious agencies and the complete separation of church and state. To these ends the lodges have been centers of political and religious discussion; the Grand Orient had taken a planned part in elections and brought pressure to bear on members of parliament and other public officials, sometimes, as in the system of delation (*l'affaire des fiches*) exposed in 1904 by Villeneuve, in a conspiratory manner.

Masonic activities in Italy, Spain, Portugal, Latin America, Hungary and Russia have not been clarified by research. That Masonry was a factor of some importance in the Italian Risorgimento seems certain: Mazzini and Garibaldi were Masons; but its relation to Carbonarism seems to have been mainly that of psychological suggestion and cooperation rather than unified organic participation. Following his rapprochement with the papal authorities, Mussolini ruthlessly suppressed all Masonic activities throughout Italy. The experience of the order in Spain has been that of brief periods of growth followed by long periods of violent repression. While its enemies attribute to it every subversive movement in Latin countries, it seems doubtful whether it can claim such widespread influence. Its membership in these countries has been small and its political activities are little likely to succeed unless in harmony with powerful new forces in the national life.

In spite of its ideal of a world wide brotherhood, Masonry has often failed, when put to the test, to transcend the limitations of nationalism and sometimes even of racial and religious differences within a nation. Prussian and Scandinavian lodges persistently refused to admit Jews, not, they said, because of race prejudice but because the strong social affinities of Jews render them a danger to the non-sectarian character of the order. For somewhat similar reasons Negroes have not been admitted to American lodges. International solidarity has been impeded by patriotism and differences as to the religious tenet. During the World War the United Grand Lodge of England excluded all brethren of Ger-

man, Austrian, Hungarian or Turkish birth and continued this prohibition long after 1918. After the war French Masonry passed resolutions against the Versailles Treaty and for disarmament—moral, economic, financial and military—the entrance of Germany into the League of Nations, the evacuation of the Ruhr, the reduction of tariffs, the suppression of chauvinism and the teaching of the German language in French schools. Nevertheless, well intentioned efforts to restore affiliation between French and German Masonry failed because of disagreement over war guilt. In 1921 the International Masonic Association was formed at Geneva by representatives of the grand lodges of France, Belgium, Bulgaria, Holland, Italy, Portugal, Spain and Switzerland and groups from Austria and the United States. Within the English speaking world Masonry has moreover promoted solidarity throughout the British Empire and good will between the empire and the United States. These international aims are emphasized by certain groups within the order in all countries which conceive of the promotion of world peace and unity as one of the conscious missions of Freemasonry.

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See: FRATERNAL ORDERS; SECRET SOCIETIES; FRENCH REVOLUTION.

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MASPERO, GASTON CAMILLE CHARLES (1846–1916), French Egyptologist. Maspero was born in Paris of Italian parents; while a student he attracted the attention of French Egyptologists and was entrusted with the editing of Champollion's field notes. At the age of twenty-eight he was appointed to the chair of Egyptian philology and archaeology at the Collège de France. In 1880 he was sent to Egypt by the French government to organize an archaeological mission and in the following year he became director of the Egyptian Department of Antiquities. Whereas his predecessor, Mariette, had maintained a virtual monopoly of archaeological work, Maspero threw Egypt open to the excavation of responsible outside societies. He returned to France to resume his academic duties in 1886 and thirteen years later was recalled to Egypt. He began the definitive publication of the rich collections of the Cairo Museum, secured the passage of a comprehensive antiquities law and campaigned for provincial museums both to relieve the congestion in Cairo and to give the local collections a wider educational scope. He resigned in 1914 and at the time of his death was perpetual secretary of the Académie des Inscriptions et Belles-Lettres.

During a long period of literary activity Maspero made many monumental contributions to archaeology, philology, history, folklore and art, including textual studies as well as authoritative general works. His *Histoire ancienne des peuples de l'Orient* (Paris 1875, 11th ed. 1912), written when he was twenty-nine, served as the basis of his brilliant *Histoire ancienne des*

peuples de l'Orient classique (3 vols., Paris 1895–99; tr. by M. L. McClure as *History of Egypt, Chaldea, Syria, Babylonia and Assyria*, 3 vols., London 1894–1900), which was encyclopaedic in scope and gained a wide audience among educated laymen throughout the western world. The *Études égyptiennes* (2 vols., Paris 1879–90) deals with all periods and all phases of Egyptian history. Maspero transcribed and translated the *Inscriptions des pyramides de Saqqarah* (Paris 1894), perhaps his greatest work; it represents brilliant pioneering in a new and difficult field. His *Archéologie égyptienne* (Paris 1887, new ed. 1907; tr. from 6th ed. by A. S. Johns, London 1914) was of primary importance in popularizing information about Egypt. Among his other outstanding works are his collections of *Contes populaires de l'Égypte ancienne* (Paris 1882, 4th ed. 1911; tr. by A. S. Johns, London 1915) and of "Chansons populaires" (in Egypt, Service des Antiquités, *Annales*, vol. xiv, 1914, p. 97–290) as well as his volume on Egyptian art (*Essais sur l'art égyptien*, Paris 1912; tr. by E. Lee, London 1913). He was a frequent contributor to many scientific and literary periodicals, founder of the *Recueil des travaux relatifs à la philologie et à l'archéologie égyptiennes et assyriennes* and director of the *Bibliothèque égyptienne*, a collection of studies by French Egyptologists.

Although Maspero stands as the leading exponent of "the French school" of Egyptology, his international eminence owes much to a cosmopolitan flexibility. As an administrator in an oriental country he pursued his aims by adapting himself to local conditions rather than by attempting to force his office into a rigid occidental mold. The world wide appeal of his writing rests on a striking lucidity of style, universally comprehensible. Subsequent work may have modified many of his conclusions, but no man has had a firmer grasp of Egyptology in its entirety.

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Consult: Cordier, Henri, *Bibliographie des oeuvres de Gaston Maspero* (Paris 1922); Naville, Édouard, in *Journal of Egyptian Archaeology*, vol. iii (1916) 227–34; Croiset, Maurice, "Un grand égyptologue français: Gaston Maspero" in *Revue des deux mondes*, 6th ser., vol. xxxiv (1916) 757–77; Cagnat, René, "Notice sur la vie et les travaux de M. Gaston Maspero" in Académie des Inscriptions et Belles-lettres, *Comptes rendus des séances de l'année 1917* (1917) 445–82.

MASS EXPULSION may be generally defined as the forced evacuation of a certain region by large numbers of people upon order of the governing authority. The order may offer no alternative or one which is obviously unacceptable to most of the people affected. Decrees which by altering the status of a group virtually compel their departure, even when emigration is definitely prohibited, as in the case of the 400,000 Protestants who fled from France after the revocation of the Edict of Nantes in 1685, have a similar effect. In practise moreover it is not alone the legally constituted government which issues and threatens to enforce expulsion orders; it was at the command of a band of white residents that a small Filipino farming colony left Florida in July, 1932. For purposes of analysis, however, it seems desirable to limit discussion to the type of mass expulsion defined.

With the exception of certain cases which involve political differences and thus constitute forms of exile (*q.v.*), such as the expulsion of the Ghibellines from Florence in 1266, or which arise from the dictates of national economic policy, such as the transfer to northern areas of thousands of Russian peasants by Soviet decree in January, 1933, mass expulsion has generally involved a group alien either religiously, racially or nationally. There is usually present an additional and immediate factor, however, which precipitates the expulsion by emphasizing the incompatibility of the alien group with the dominant culture. The variety of factors and combinations of factors which produce this result can best be gauged by an examination of typical historical instances.

In the earliest forms of mass expulsion, generally associated with the Assyrian system of imperial administration and to be distinguished from the custom whereby captives were driven off to slavery or sacrifice, groups which had been rendered tributary to Assyria were subsequently uprooted and transplanted to other parts of the empire, generally, however, only after they had rebelled against Assyrian domination. Under the earliest system they were replaced by Assyrians; but Tiglath-pileser III seems to have instituted the interchange of subject groups, replacing deportees by groups deported from other parts of the empire. The guiding principle was an attempt to break down the cultural separateness of the rebellious groups and to assimilate them all to one cultural level. For this purpose it was generally sufficient to remove only the rulers and other leaders as well as all artisans and men capable of bearing arms. The remainder of the population, mingled with deportees from other sections, would lose its separate character. Separation from the land with which they had always

associated not only their national consciousness but even their national god would prevent the deportees from developing into aggressive rebels; this end was further assured by the practise of scattering them among a number of villages. After a few generations they would become assimilated into the cosmopolitan Assyrian Empire. This is no doubt what happened to the ten tribes of Israel which were transported from Samaria by Sargon in 722 B.C. The Assyrian policy succeeded in maintaining order, but the cosmopolitan spirit it created made it relatively easy for outside conquerors—the Babylonians—to seize power in Assyria. The Babylonians followed the Assyrian policy, notably in the case of the captivity of the Jews; so also did the Persian and Byzantine emperors. The Greeks occasionally practised a system analogous to the earlier Assyrian.

Another form of transplantation within the same empire is that dictated by national economic policy rather than by the desire to eliminate internal strife. Thus the Russian emperor Yaroslav in 1031 moved large groups of Poles from conquered areas of northern Galicia to his sparsely settled lands in Russia. Similarly, the present Soviet government occasionally transfers certain groups in order to increase the efficiency of the national economic machine. As in their fundamental assumptions regarding the relative importance of national economy and individual rights, these transplantations by Soviet authorities are related in purpose to the mercantilistic requirement that individuals remain in a particular locality. The importance ascribed by mercantilistic England to an immobile working population—an importance emphasized by the problem of poor law administration—was a factor in the expulsion of the nomadic gypsies by Henry VIII.

The role of war in precipitating the expulsion of previously tolerated groups is perhaps best illustrated by the pathetic case of the Acadians, the subject of Longfellow's *Evangeline*. The refusal of the Acadians, who lived on former French territory, to assent to bear arms against France led the English to uproot them and to scatter them among the English colonies of North America. During the World War descendants of old German colonists in Russia, living in a wide band of territory along the frontier, were expropriated by the Russian government, ostensibly because their loyalty could not be depended upon. That this was merely a device to appease land hungry Russian peasants is evident from the fact that the area covered by expropriation orders was subsequently extended until it included practically the entire empire and that these German descendants supplied over 250,000 soldiers for the Russian army. On the western front Germany, needing man power in industry and agriculture to replace those serving in the army, deported to its own territory unemployed workers in occupied Belgian territory.

The frequent and widespread expulsions of the Jews are traceable primarily to their religious, racial and national separatism. Despite these alien characteristics, the Jews were not only tolerated but accorded fairly broad privileges for long stretches of time in countries which subsequently expelled them. Among the Jews the practise of money lending, which in some cases amounted to a monopoly, led to their being hated and consequently oppressed, especially in England. On the other hand, the Jews were useful to the kings of England by virtue of the royal rights over usurers and their estates, so that for long the English rulers resisted the demands for expulsion put forward by the church and the people; by 1290, when they were finally expelled, the Jews had lost their wealth and with it their strategic position, largely as a result of massacre, confiscation, taxation and the prohibition by the act of 1275 of their money lending activities. In France the operation of the economic factor was even more important; French policy, while ostensibly motivated by religious antagonism to the Jews, was mainly concerned with exploiting them for public revenue. At times toleration and protection, with the payment of regular tailles, fines and stamp taxes, were most profitable; at others, as in 1182, 1306 and 1394, expulsion and confiscation of property and sums due them seemed the most statesmanlike procedures.

The expulsion of both the Jews and the Moriscos from Spain was primarily a result of the drive to secure national homogeneity in the Spanish state, which had finally succeeded in wresting the last bit of Spanish territory from the Moors. At a period when the relations between church and state were so close, religious uniformity was the dominant requirement for this national homogeneity. It is significant that the Jews were expelled only after the failure of attempts to convert them to Christianity. Similarly, the Moriscos were expelled in 1609 and 1610 only after forcible conversion to Catholicism had failed to produce religious conformity.

Continuous attempts to enforce such conformity in the latter case had resulted in over a century of internal strife and civil war and had produced a hostile alien element in the population—a potential ally for the enemy in case there should be an invasion of Spain by Moslem elements from northern Africa. The objections to the decree raised by the Spanish barons on the ground that it would deprive them of their most skilled agriculturists and artisans, and the attempt to keep 6 percent of the Moriscos in the country until they could train Spanish workers to replace them indicate that even at that time the economic disadvantages of the measure were apparent. The decline of Spain from world power rank is no doubt partly attributable to these forced migrations of Jews and Moors, who represented in a large measure the economic strength of the country.

Modern history furnishes a close analogy to the Spanish expulsions in the drive of the Turks to eliminate from their borders all alien elements —a drive which in a little over a decade removed over 2,000,000 members of alien minorities. But while the Spanish expulsions were largely attributable to the domination of the church over the secular authority, the wholesale expulsions from Turkey were due to a rising nationalism which was at the same time engaged in an attempt to secularize the state. The causes of the expulsion are therefore to be sought not in religious differences per se, but in the existence within the Turkish state of religious minorities organized as political entities under the *millet* system. These traditional political units could not quickly be absorbed into the new Turkish nationalism, and in a region troubled by resurgent nationalisms they represented danger zones to be eliminated as quickly as possible.

The unsettled Balkan situation with its complicated minorities problems has produced a variant of mass expulsion, namely, exchange of populations. General international practise has been to accord to individuals in ceded territory the right to choose their nationality within a certain time limit; if they elected to move so as to retain their former nationality, they were to retain the right to their property, movable and immovable. In 1913, however, following the First Balkan War, Turkey and Bulgaria provided for the reciprocal exchange of Bulgarian and Moslem populations within fifteen kilometers of the entire newly created common frontier. As most of the individuals involved had already emigrated, this provision served largely to ratify a *fait accompli* and was intended merely to force the small remainder to follow suit. In 1914 the Turks, having expelled 150,000 Greeks from the coast of Asia Minor to Greece and having deported 50,000 more to the interior of Anatolia, induced the Greek government to accept these deportations and to supplement them by an exchange of Moslems from Macedonia against the Greek rural population of the Smyrna region. Turkey's entrance into the World War ended the operation of both these agreements. After the war Greece and Bulgaria signed a convention which recognized the right of national minorities to emigrate and which set up a mixed commission of representatives of the two countries to facilitate the exercise of that right. Greece's action early in 1923 in transferring some of its Bulgarian inhabitants to other sections of Greece for military reasons precipitated a Bulgarian exodus, which in turn resulted in an enforced Greek migration from Bulgaria; thus what set out to be a voluntary individual act became a forced migration. Frankly compulsory from its very inception was the Greco-Turk covenant in the Lausanne Treaty, which provided for the compulsory departure from Turkey (with the exception of Constantinople) of all Turkish nationals of the Greek Orthodox religion and of all Greek nationals of Moslem faith from Greece (except for Western Thrace). As far as the Greeks in Turkey were concerned, the convention was largely a ratification of a *fait accompli*; even so, almost 200,000 Greeks emigrated from Turkey under its terms. Greece expelled over 350,000 Moslems under the agreement, thus obtaining some lands upon which to resettle Greek refugees from Turkey, a process which was aided by the League of Nations through its representative, Fridtjof Nansen.

Other examples of religious groups expelled because of the effect of their religious views upon the proper functioning of the state might be mentioned. Sects like the Mennonites, Socinians and Dukhobors, which prohibit the taking of oaths, resort to civil courts, holding political office and, most important of all, service in the army, have frequently been subjected to persecution involving mass expulsion in many cases. Fear that the Mormons would replace frontier democracy based upon individual opinion by a theocracy directed by the elders of the Mormon church led to their persecution by the Gentiles and precipitated a civil war in Missouri which resulted in 1838 in Governor Boggs' order expelling the Mormons from the state.

If politically dangerous religious minorities have been persecuted and expelled, so also have the representatives of the dominant church when the latter has challenged the power of the secular authority. The Venetian controversy with the pope over the claims of the universal church to jurisdiction over the people of Venice was accompanied by the expulsion of the Jesuits from that state in 1606 and again in 1761, when they were also expelled from other states. The expulsions of Catholic priests and church dignitaries in Spain and Mexico in 1931 followed revolutions of an antireligious class nature.

The problem of protecting the deportees from murder, famine and disease has generally proved formidable. Massacre (*q.v.*), which has frequently served as a prelude, as in the case of the Jews and Moriscos, has also often been an accompanying feature of expulsion. With no government responsible for or strong enough to assert an interest in their protection, rarely provided with police escort even as far as the port of embarkation, the deportees have been at the mercy of the captains who transported them and of the people among whom they were landed. Inadequately provided with food, shelter and sanitation, the mortality rate among them has generally been very high. Of the half million Moriscos who were deported from Spain in 1609 and 1610, it has been estimated that only one fourth to one third survived the expulsion. A large proportion of the 7000 Acadians died of famine, disease or shipwreck; and the plight of the deported Armenians was even worse than that of the Acadians.

Even more meager, although less dramatically tragic in its consequences, has been the provision for protecting the property rights of the deportees. Where they have been permitted to convert their property into movable wealth, the inevitable effect of such a large scale offer of commodities for immediate sale has been to reduce their value almost to the vanishing point. Even when the right of sale was granted, it did not generally apply to real property. In many cases, particularly where the deportations took place under governments dominated by bullionist and mercantilist conceptions, the deportees could not take with them gold or silver or even, in some cases, precious stones. In the case of the Acadians the promise of transport facilities proved greater than the fulfilment, and their hastily gathered household goods were left to rot on the shores of the Bay of Fundy.

Where transplantation took place within the boundaries of a single state, some attempt was generally made to provide land for the deportees. In Assyria, where practically all the land was the property of the monarch and was held by the cultivator at the monarch's will, this was relatively easy. It is even probable that the Jews during the Babylonian captivity obtained better soil than they had possessed in their homeland. In the first transfer of the Dukhobors in Russia in 1841 land was provided for them in Transcaucasia, but in the deportations of 1895 no such provision was made. The problem of property rights of deportees would obviously not be considered important in a country based, like Soviet Russia, upon the ideal of the abolition of private property.

The most elaborate provision for the protection of the property rights of uprooted peoples was made in the various Balkan compacts for the exchange of populations. These set up mixed commissions which were to liquidate the property left by the deportees and to provide funds for their resettlement. However, the commissions set up under the Turko-Bulgarian convention and the Greco-Turkish agreements of 1914 and 1923, on the last of which the Council of the League of Nations was represented, never carried out the contemplated appraisal and liquidation. Only the Greco-Bulgarian Mixed Commission ultimately made any substantial payments—partially in cash and the balance in bonds which have depreciated considerably. Thus even when two governments have cooperated to protect the property rights of the transplanted peoples, the result has been failure in most cases, apparently because of the atmosphere of group animosity and distrust which prevails at the time and which has led to the expulsion.

Any evaluation of mass expulsion from the standpoint of all those concerned must conclude that it is undesirable as an instrument of state policy. The effect upon the deracinated individuals and groups is obviously bad. As far as the expelling country is concerned, the effect has generally been to deprive it of an economically and culturally important section of the population—often economically the most advanced and aggressive, as in the case of the Jews and Moors in Spain and the Greeks and Armenians in Turkey. Uniformity is purchased at considerable economic and cultural cost in such cases. The countries to which the refugees migrate are confronted by the problem of providing for their immediate economic and sani-

tary needs and for their ultimate resettlement; the financial burden involved in such provision is extremely heavy, especially in the case of relatively poor states like Turkey and Greece. Mass expulsion appeals to the statesman as a form of surgical operation—the removal at one time of a chronic source of irritation. Under conditions in which group conflict and minority oppression have apparently become unavoidable, mass expulsion may appear the easiest and quickest solution; the remedy is therefore to be sought in the prevention of such conditions, the roots of which lie deep in the fundamental factors of national, racial and religious intolerance and persecution, which produce alike massacre, oppression of national and religious minorities and mass expulsion.

JOSEPH J. SENTURIA

See: PERSECUTION; INTOLERANCE; MINORITIES, NATIONAL; NATIONALISM; ASSIMILATION, SOCIAL; ALIEN; ANTISEMITISM; DIASPORA; EXILE; MASSACRE; VIOLENCE; CONQUEST; EMIGRATION; DEPORTATION AND EXPULSION OF ALIENS.

Consult: For the Jews: Graetz, H. H., *Geschichte der Juden von den ältesten Zeiten bis auf die Gegenwart*, ed. by Markus Brann and others, 11 vols. (2nd–5th ed. Leipsic 1897–1911), rev. by author and tr. by Bella Löwy, 6 vols. (Philadelphia 1891–98); Margolis, M. L., and Marx, Alexander, *A History of the Jewish People* (Philadelphia 1927); Klamroth, Erich, *Die jüdischen Exulanten in Babylonien*, Beiträge zur Wissenschaft vom Alten Testament, vol. x (Leipsic 1912); Abbott, G. F., *Israel in Europe* (London 1907); Hyamson, Albert M., *A History of the Jews in England* (2nd ed. London 1928); Abrahams, B. L., *The Expulsion of the Jews from England in 1290* (Oxford 1895); Azevedo, J. L. d', *Historia dos christaos novos portugueses* (Lisbon 1921). For the Moriscos: Danvila y Collado, Manuel, *La expulsión de los moriscos españoles* (Madrid 1889); Boronat y Barrachina, Pascual, *Los moriscos españoles y su expulsión*, 2 vols. (Valencia 1901); Lea, H. C., *The Moriscos of Spain: Their Conversion and Expulsion* (Philadelphia 1901). For the Acadians: Lauvrière, Émile, *La tragédie d'un peuple*, 2 vols. (new ed. Paris 1924); Bible, George P., *An Historical Sketch of the Acadians* (Philadelphia 1906); Graham, H. F., *The Acadian Exile* (Boston 1919). For the Mormons: Cannon, F. J., and Knapp, G. L., *Brigham Young and His Mormon Empire* (New York 1913); Linn, W. A., *The Story of the Mormons* (New York 1902); Roberts, B. H., *The Missouri Persecutions* (Salt Lake City 1900). For the Exchange of Minorities: Séfériadès, Stelio, "L'échange des populations" in Academy of International Law, *Recueil des cours*, vol. xxiv (1929) 307–439; Ladas, S. P., *The Exchange of Minorities: Bulgaria, Greece and Turkey*, Harvard University and Radcliffe College, Bureau of International Research (New York 1932); Eddy, Charles B., *Greece and the Greek Refugees* (London 1931). For Other Expulsions: Toynbee, A. J., *The Belgian Deportations* (London 1917), and *Armenian Atrocities* (rev. ed. London 1915); Passelecq, Fernand, *Déportation et travail forcé des ouvriers et de la population civile de la Belgique occupée*, Carnegie Endowment for International Peace, Economic and Social History of the World War, Belgian series (Paris 1928); Horsch, J., *The Hutterian Brethren, 1528–1931*, Studies in Anabaptist and Mennonite History, no. 2 (Goshen, Ind. 1931); Rempel, D. G., "The Expropriation of the German Colonists in South Russia during the Great War" in *Journal of Modern History*, vol. iv (1932) 49–67; Baird, H. M., *The Huguenots and the Revocation of the Edict of Nantes*, 2 vols. (New York 1895).

MASS PRODUCTION. *See* LARGE SCALE PRODUCTION.

MASSACHUSETTS TRUSTS. Massachusetts, or business, trusts are unincorporated organizations for carrying on a business for profit under a written declaration of trust. The declaration creates a board of trustees to manage the enterprise for a group of cestuis que trust whose interest is represented by transferable certificates of participation. Such a trust is usually recognized as an entity capable of transacting business in the name of its choice; it survives the life of an individual cestui or trustee; and limited liability of the participants is frequently achieved. The result is a commercial organization closely akin to a corporation.

The business trust is a device peculiar to the common law system. Historically it is an offshoot of that great overgrown partnership, the English joint stock company. Legally it is a monument to the ingenuity of counsel who adapted the specialized Anglo-American law of trusts (*see* TRUSTS AND TRUSTEES) to secure corporate advantages without incorporation. It was first introduced in the United States in Massachusetts as a means of evading the requirement of a special charter (which was very rarely granted by the legislature) for the corporate holding of land; it subsequently appeared in other states in an ever widening variety of business projects.

The economic forces which led to the development of the business trust were similar to those which led to a concomitant growth of the corporation. But when incorporation ceased to be a special privilege, the business trust was at first completely overshadowed by the corporation as a form of business organization. Near the close of the nineteenth century, however, as governmental regulation of corporations became more and more onerous, the business trust was revived as a means of avoiding regulative laws. Attempts to use the trust form to protect the sugar and oil combinations from legislative and

common law prohibitions against monopoly were early nullified by the courts [People *v.* North River Sugar Refining Co., 121 N. Y. 582 (1890); State *ex rel.* Standard Oil Co., 49 Ohio 137 (1892)]. But in many other respects the draftsmen of Massachusetts trust indentures were at first successful in their aim.

Unlike a corporation, which theoretically at least derives its authority for doing business from the state, the business trust has been said to be a mere matter of contract. Freedom of contract will allow the promoters to define as they please the scope of the business, the powers of the trustees and the rights or lack of rights of the capital contributing cestuis. The Massachusetts trust thus avoided many of the corporate safeguards to protect stockholders, minority interests and creditors. By its use numerous activities closed to corporations were entered upon; management was effectively concentrated in the hands of a self-perpetuating inside financial group who acted as trustees; voting privileges and preemptive rights were successfully denied the residual shareholders so as to free the management from the danger of bothersome interference by minority or majority factions; expensive incorporation fees as well as some franchise and corporate stock taxes were obviated; the nuisance of filing annual reports with the state was avoided; and qualification to do business in foreign states was often unnecessary.

One of the most serious disadvantages of the trust lies in the risk that shareholders may be held liable as partners. This possibility appears to turn upon the extent of the potential control of the business allowed them by the trust agreement. If they are accorded no powers of initiating action or of amending the indenture or of removing or electing trustees, then the trustees have often been deemed to be transacting business as "pure" trustees rather than as "agents" of cestuis associated together as partners. But the courts of some states, such as Texas, have regarded the business trust as an ill concealed attempt to dodge general incorporation or limited partnership statutes and have declared that limited liability may be had only by compliance with such statutes. The whole question of whether partnership liability is a matter of contract or status is an open one in the great majority of states.

Trustees too may find that they are liable as individuals to a greater extent than they anticipated. For although they may and usually do contract that creditors shall look only to the trust estate for satisfaction of their claims, both the trustees and the shareholders may be barred from asserting this defense because the creditor has not had proper notice of the limitation. And whether limited liability of trustees or shareholders against tort claims can ever be secured is still uncertain in most jurisdictions.

The business trust occupies a broad indefinite ground between the corporation and the joint stock company or partnership. The rights and duties of corporate stockholders and directors have been fairly well crystallized by decisions and statutes. Similar questions involving business trusts have been so infrequently litigated as to leave their outcome problematical. Where such questions have been before the courts, judges have not infrequently analogized the trust to a partnership when the trust interests contended it was like a corporation and likened it to a corporation when the trust interests claimed it was like a partnership or individual entrepreneur. Thus a Massachusetts trust has been held to be like a partnership when seeking entrance into the federal courts on grounds of diversity of citizenship and like a corporation when seeking to do business in a foreign state without qualifying in the manner prescribed for foreign corporations. Furthermore although the power to sue and be sued by third parties in the name of the trust is usually allowed, shareholders and trustees have been denied the privilege of settling claims *inter se* at law and have been left instead to all the difficulties of a partnership accounting in equity.

Despite the disadvantages of Massachusetts trusts they have been widely used since 1900. The Boston Personal Property Trust is perhaps the most notable example of the use of the Massachusetts trust to avoid laws denying corporations the right to hold real estate. The Associated Gas and Electric system and other utility companies hold stock in Massachusetts operating utilities through business trusts—presumably to get around the state law preventing the control of domestic utilities by foreign holding companies. Throughout the southwest the business trust has become the favorite organization of oil speculators engaged in wildcatting, apparently because of the speed and informality with which the trust may be set up and carried on. Building trusts are often used, especially in Chicago, to keep the control and interest of large real estate holdings in the hands of a single family. The Massachusetts trust has proved a convenient medium for patent pools where the

naming of a large bank as trustee is thought to promote confidence in equality of treatment among licensees. The great express companies formerly chose the trust form of organization in part because they believed it would enable them to avoid qualifying for the doing of business in foreign states. Large manufacturing groups like the Simmons Hardware Company and the Amoskeag Manufacturing Company operate under trust agreements in order to secure particular tax advantages and concentration of control in the hands of a self-perpetuating board of trustees. In England and of late in the United States the business trust has become increasingly popular in the investment trust (*q.v.*) field. The Massachusetts trust is likely to be most used as a means of still further divorcing financial management from residual ownership. Instead of frowning upon this separation, as in the case of voting trusts of corporate stock, courts have encouraged it by insisting that unless trust shareholders surrender all the usual prerogatives of management they will be subject to partnership liabilities.

Subsequent to 1910 all manner of extravagant claims were made as to the constitutional immunities enjoyed by the business trust from governmental regulation and taxation. However, Massachusetts in 1909 and several states since then have successfully required that all such declarations of trust be registered and annual reports filed. Blue sky laws have been almost universally interpreted as applicable to trust securities. The Supreme Court has sustained state laws compelling foreign business trusts to subject themselves to service and to qualify in the same manner as foreign corporations. The same court has held there is nothing unconstitutional about taxing them like corporations if only the legislature makes clear such intention.

Careless drafting of regulative statutes may hamper future effective control of business trusts. This has already been demonstrated in taxing laws which have not expressly included the business trust along with the corporation, joint stock company and other business associations. Governmental regulation of corporations can no longer be regarded as a price paid for the privilege of doing business in the corporate form; it is clearly a part of the movement for public control of business enterprise. The tendency increasingly to subject the business trust to regulation similar to that of the corporation has considerably reduced its usefulness as a substitute for the latter. Its importance as compared with that of the corporation has tended to decline and it no longer threatens, as some of its advocates once supposed, to displace the corporation.

J. HOWARD MARSHALL, II

See: TRUSTS AND TRUSTEES; TRUSTS; CORPORATION; PARTNERSHIP; JOINT STOCK COMPANY; FOREIGN CORPORATIONS; INVESTMENT TRUST; VOTING TRUST.

Consult: Wrightington, Sidney R., *The Law of Unincorporated Associations and Business Trusts* (2nd ed. Boston 1923); Warren, Edward, *Corporate Advantages without Incorporation* (New York 1929); Dunn, William C., *Trusts for Business Purposes* (Chicago 1922); Sears, J. H., *Trust Estates as Business Companies* (2nd ed. Kansas City 1921); Thompson, Guy A., *Business Trusts as Substitutes for Business Corporations* (St. Louis 1920); Wilgus, H. L., "Corporation and Express Trusts as Business Organizations" in *Michigan Law Review*, vol. xiii (1914–15) 71–99, 205–38; Cook, William W., "The Mysterious Massachusetts Trusts" in *American Bar Association Journal*, vol. ix (1923) 763–68; Crotty, James A., "The Business Trust" in *Lawyer and Banker*, vol. xv (1922) 205–20; Comments on the Massachusetts Trust in *Yale Law Journal*, vol. xxxvii (1927–28) 1103–21; Hildebrand, I. P., "The Massachusetts Trust," and "Liability of Trustees, Property and Shareholders of a Massachusetts Trust" in *Texas Law Review*, vol. i (1922–23) 127–61, and vol. ii (1923–24) 139–82; Massachusetts, Tax Commissioner's Department, *Report of the Tax Commissioner on Voluntary Associations*, Legislature, House Document, no. 1646 (1912), and Special Commission to Investigate Voluntary Associations, *Report*, General Court, House Document, no. 1788 (1913); Magruder, Calvert, "The Position of Shareholders in Business Trusts" in *Columbia Law Review*, vol. xxiii (1923) 423–43; Aaron, H. J., "The Massachusetts Trust as Distinguished from Partnership" in *Illinois Law Review*, vol. xii (1917–18) 482–88; Rottschaefer, H., "Massachusetts Trust under Federal Tax Law" in *Columbia Law Review*, vol. xxv (1925) 305–15; Duxbury, L. S., "Business Trusts and Blue Sky Laws" in *Minnesota Law Review*, vol. viii (1923–24) 465–84; Massachusetts, Special Commission on Control and Conduct of Public Utilities, *Report*, General Court, House Document, no. 1200 (Boston 1930) sect. 9, appendixes C and N.

MASSACRE is the large scale slaughter of unarmed persons. Massacres may be planned acts of policy ordered by authority or more or less spontaneous mob action. In the former case a rational object can usually be discerned, in the latter blind passion may predominate. Fear usually plays a chief part as the motive, although the victims may be only the allies, kinsmen or protégés of the dreaded enemy. Commonly victims are regarded as contemptible and abominable. To what degree massacre involves pathological elements of fear, blood lust, sadism and even physical responses inconsistent with sane behavior in an ordered society is a question for

the psychologist and even for the physiologist. There are in general two main types of massacre. The one is large scale slaughter of unarmed persons as a demonstration of ruthless power to discourage opposition. This type of massacre shares the essential characteristics of atrocities in general. The second type is directed toward the literal extermination of a tribe, group, sect, nation or class.

Primitive tribes rarely pushed quarrels to such an extreme as massacre. Indiscriminate slaughter of the divine king's enemies seems to have been introduced by the theocratic empires of antiquity. Their invention of fighting in formation made it easy, their theology justified it, and it became the ordinary accompaniment of warfare and conquest. King Narmer's palette, probably the earliest of Egyptian historical records, shows that monarch butchering his suppliant foes with his own hands. Ancient monuments glory monotonously in massacre and gloat over the misery inflicted. The desolation of Israel is the boast of the stele of Merneptah (*c.* 1225 B.C.); it proved the majesty of the god and of his human representative, the king. Babylonia and Assyria had similar practises. The extermination of the adult male population was the normal process of conquest: to enslave or carry into captivity men as well as women and children undoubtedly marked an advance in humanity.

The Greek civil wars were of an exemplary brutality. When in 427 B.C. Mytilene revolted against the Delian League, at this time a thin disguise for the Athenian empire, the Assembly sentenced the entire population to death; the decree was partially executed and then rescinded. A less tribal and more universal morality, of which stoicism was the noblest expression, influenced public conduct in the mature centuries of Greco-Roman culture. Imperial Rome had her oft violated ideal of sparing the vanquished while crushing the defiant. Later centuries degenerate in this as in other respects, and the struggles of the Christian sects have been stained by frequent massacres.

In modern times (a phrase connoting widely different periods in various parts of the earth) mankind regards massacre as an abnormal and criminal incident which calls for explanation. Modern massacres may be classified according to the occasions leading to them. In contemporary international wars they are usually defended by commanders as reprisals for some alleged breach of the usages of war. The shooting of guerrillas or francs-tireurs (ununiformed irregulars) may be extended to unarmed civilians suspected of giving them shelter or aid. This was done by the Germans at Namur in 1914 and on a very large scale by the Japanese at Shanghai in 1932. Alleged abuses of the white flag led to some shooting of prisoners by the British in the Boer War. Occasionally troops who have suffered heavy casualties will spontaneously take revenge on prisoners: machine gunners were often massacred in this way during the World War. Finally, a force which cannot transport or feed its prisoners will sometimes shoot them; this was occasionally done by both sides during the submarine campaign of the World War.

Similar in nature to these military reprisals is the large class of cases in which for purposes of repression a police or military force needlessly slaughters a harmless crowd engaged in some form of protest against authority. Fear is the real prompter: one must "make an example" of a given crowd in order to intimidate the whole of a potentially disloyal population. The attitude of upper classes, whether feudal or capitalistic, toward the working mass at times approaches this. The recent annals of the most civilized nations are not devoid of such excesses: one may take as outstanding instances the affair in Boston, Massachusetts, in 1770; the riding down by cavalry of the orderly reform demonstration at Peterloo near Manchester, England, in 1819; the shooting outside the Winter Palace in St. Petersburg in 1905 of the procession of workers which followed Father Gapon to lay a petition before the czar; the massacre of an Indian crowd by General Dyer at Amritsar.

Graver cases of massacre, at bottom attempts to exterminate an entire element of population be it race, class or sect, are most frequent where a small body of white men are holding down a subject population which they are pleased to consider inferior. Such massacres are apt to occur in the course of imperial expansion when a native race, which cannot easily be tamed or assimilated, has from the settlers' standpoint no economic utility, because it can be neither enslaved nor hired. Often it claims for hunting vast stretches of country which the settlers wish to use for other purposes. To justify massacre it is then only necessary to accuse the natives of low, immoral or cruel conduct: because their customs are not understood they are often said to be "treacherous"; when their culture is in fact a lowly one, their very humanity is denied.

Here again fear may be the chief cause of massacre, especially where the settlers are outnumbered by a gallant and mobile enemy who uses the tactics of surprise, as was the case in North America. The most complete instance of the continuous massacre of a lowly race economically useless to the invaders is the extermination of the entire native population of Tasmania by the British settlers in a period of a few decades. Another type of imperialist massacre frequently accompanies the exploitation of a tropical native population by means of a tribute in kind or a money impost designed to drive it to work for hire on white men's plantations. The Belgian Congo under King Leopold II was a leading instance.

The victim of course retaliates when he can. The English tried to get rid of Danish invaders by murdering them in their beds on a prearranged signal. The Sicilian Vespers of 1282 were a case of this kind: the Greek and Saracen population, cruelly oppressed by Charles of Anjou, who imported armed French adventurers, utilized a chance quarrel over a woman to start a massacre of all strangers. The massacres conducted by the sepoys in the Indian Mutiny, on the inspiration of their royal native leaders (especially Nana Sahib), were of this type; the sepoys imagined that they could rid themselves of the conquest by slaughtering the English in their midst. The Boxer rising in China, a nationalistic rising of the same type, led to some sporadic killing of isolated Europeans.

Class wars notoriously lead to massacre. An upper class cannot wish or hope to exterminate the class that serves it, but it may intimidate it by thinning its numbers. A revolted lower class may try to exterminate its oppressors. The *Jacquerie*, a rising of French peasants in 1358, ended with a massacre of the insurgents unparalleled in horror. The peasant risings in Russia in 1905 and 1918 aimed at dividing the landlords' property: the more unpopular nobles were butchered save where they had fled to the towns.

Underlying the massacres of aristocrats and priests during the French revolutionary Terror was an idea of exterminating a hated and dangerous class. Such wholesale brutality could be caused only by acute fear; and this the French nation (or its bourgeoisie) not unreasonably felt when it saw all the monarchs of Europe leagued against it and suspected, sometimes with justice, that the aristocrats in its midst were conspiring with the foreign enemy. Usually, however, some rapid form of irregular trial preceded the mass killings of the Terror. Some episodes, such as Carrier's massacres without trial at Nantes, especially the *noyades*, suggest insanity. Carrier, who had a record of moderation, seems to have been driven literally mad by the cruelties of the Royalists in the Vendée. The terror in the Russian Revolution ran on closely parallel lines and proceeded rather by numerous and continuous executions than by massacres in the proper sense of the word. The White armies systematically butchered their Communist prisoners, as did also the French bourgeoisie the communards in 1871. The present Chinese civil war, emphatically a class struggle between revolted peasants under Communist leadership and the armies of the Nanking government, has involved massacres on an incredible scale.

Finally, the elements of the population to be exterminated may differ from the butchers in creed. In such cases one must ask whether religious fanaticism is a sufficient explanation of the massacre. Invariably some other motive is present, often economic, often the determination of a challenged authority to assert its power. The motive of Pope Innocent III in launching a crusade against the Albigenses at the end of the twelfth century was certainly not fanaticism. The church was a system of authority challenged by a heresy which spreading rapidly from eastern to western Europe might have anticipated the consequences of the Protestant Reformation had it not been ruthlessly and forcibly crushed. The general of the church, Simon de Montfort, won a rich province and his soldiery plundered the cities, whose inhabitants they massacred as enemies of God addicted to incest and sodomy. When once they wished to stop, on the ground that some good Catholics might perish in the general slaughter, the papal legate answered them "Kill! God will know His own."

No more does fanaticism explain the salient massacres of the Reformation period. The slaughter of St. Bartholomew in 1572 was an act of calculated statecraft devised by Catherine de' Medici, a product of an Italian school of policy which believed only in the self-interest of princes. The king himself gave the first signal for the massacre. The fury of the Parisian mob subsiding after a long and cruel civil war was deliberately mobilized. For this massacre, which may have accounted for fifty thousand lives, the court won the congratulations of other Catholic powers; the Sorbonne defended the achievement

and Pope Gregory XIII celebrated it by striking a medal. In such massacres as that of Catholics by Cromwell in Ireland the motive, apart from reprisal and the assertion of secular authority against rebels, was manifestly economic: the butchers won lands. The part that religion played in all these cases after another motive had come into action was to remove the victims from the range of scruple and sympathy. They were God's enemies, despisers of the holy sacraments or else idolaters.

The massacres of Christians by Mohammedans in Turkey, which played so great a part in international politics during the nineteenth century, raise the same difficulties of interpretation. Abdul-Hamid, whose personal character dominated Turkish policy for a generation, was a gloomy, fear ridden fanatic, who believed intensely in his religion and in himself as its caliph. But then as later during the World War the prime motive resembled that of the French bourgeoisie during the Terror: the Turks saw the Armenians as domestic allies of Christian empires (especially Russia) seeking to destroy the Ottoman Empire. The mob disliked this race of traders, to whom it always owed money; infidels were fair game for indebted believers. The final "liquidation" of the Armenian race in Turkey was organized by the freethinking Young Turks for purely political reasons.

Pogroms against Jews have often started with apparent spontaneity, especially when the legend of ritual murder was abroad. The mob had, however, generally an economic motive—to extinguish a debt with the usurer. Even when it believed itself to be avenging the crucifixion, the houses of God's enemies were worth looting. The more serious pogroms of modern times, those in Russia, for example, were organized from above on the basis of popular hatred. Fearing genuine revolutionary movements of workers or peasants, conservative classes or governments try to turn passions against the Jews. Von Plehve, minister of the interior, organized an appalling series of massacres of Russian Jewry beginning in Kishinev in 1903. During the revolutionary civil war the White general Denikin and the "Green" bandit armies fighting in the same region employed pogroms on an even greater scale as a counter-revolutionary safety valve.

If graver massacres always involve the connivance if not the participation of a government, the only adequate measure of prevention would be removal of guilty governments. In the absence of an international authority of sufficient prestige and strength such action is difficult, dangerous or impossible. The Concert of Europe, because the motives of its component powers were manifestly imperialistic, on the whole aggravated the lot of the Christians of Turkey. A boycott if proposed without preliminary inquiry and without an authoritative organ to impose constructive remedies is open to similar objections. A massacre is a symptom rather than a specific evil. It means an aggravation of a habitual system of imperialist oppression, or it is evidence of a fundamental conflict between two classes or races. The real problem is not so much that of checking massacre as of dealing with the conditions under which governments or mobs resort to it.

H. N. BRAILSFORD

See: ATROCITIES; VIOLENCE; MOB; WARFARE; GUERRILLA WARFARE; REVOLUTION AND COUNTER-REVOLUTION; RACE CONFLICT; INTOLERANCE; ANTISEMITISM; BLOOD ACCUSATION; MASS EXPULSION.

Consult: Edwards, Lyford P., *The Natural History of Revolution* (Chicago 1927) ch. viii; Davie, M. R., *The Evolution of War: a Study of Its Role in Early Societies*, Yale Publications in Economics, Social Science and Government, vol. i (New Haven 1929); Allard, Paul, *Histoire des persécutions pendant les deux premiers siècles* (3rd ed. Paris 1903); Luzzatti, Luigi, *Dio nella libertà* (Bologna 1926), tr. by A. Arbib-Costa (New York 1930); Acton, J. E. E. D., *The History of Freedom and Other Essays* (London 1907) chs. ii, iv–v; Graetz, Heinrich, *Geschichte der Juden von den ältesten Zeiten bis auf die Gegenwart*, 11 vols. (2nd–5th ed. Leipsic 1890–1909), tr. by B. Löwy, 6 vols. (Philadelphia 1891–98) vol. i, ch. xxii, vol. ii, chs. ix, xi, vol. iii, chs. x, xii–xiii, xvii, vol. iv, and vol. v, ch. i; Warner, H. J., *The Albigensian Heresy*, 2 vols. (London 1922–28) vol. ii, pt. i; Butler, A. J., "The Wars of Religion in France" in *Cambridge Modern History*, vol. iii (London 1905) ch. i; Macleod, W. C., *The American Indian Frontier* (London 1928); Walter, Gérard, *Les massacres de septembre* (Paris 1932); Mathiez, Albert, *La réaction thermidorienne* (Paris 1929) ch. ix; Martin, Gaston, *Carrier et sa mission à Nantes* (Paris 1924); Mason, Edward S., *The Paris Commune; an Episode in the History of the Socialist Movement* (New York 1930); Horniman, B. G., *Amritsar and Our Duty to India* (London 1920); Steiger, G. N., *China and the Occident; the Origin and Development of the Boxer Movement* (New Haven 1927) chs. x–xi; Toynbee, A. J., *Armenian Atrocities, the Murder of a Nation* (London 1915); *Die Judenpogrome in Russland*, 2 vols. (Cologne 1910); Gergel, N., "Die Pogromen in Ukraine in die Yoren, 1918–1921" (in Yiddish), in Yiddisher-vissenschaftlicher Institut, Ekonomish-statistishe Sektzie, *Schriften far ekonomi un statistik*, vol. i (1928) 106–13; Jaszi, Oszkar, *Magyariens Schuld Ungarns Sühne; Revolution und Gegenrevolution in Ungarn* (Munich 1923), tr. by E. W. Dickes as *Revolution and Counter-revolution in Hungary* (London 1924).

MASSES. The term masses, an elastic epithet devoid of any precise scientific content, is more likely to reveal the point of view of the person using it than to clarify the phenomena in question. In spite of recent moves, notably among the German critics of Le Bon, in the direction of clarifying terminology, the older metaphorical connotations persist. Among unrepentant aristocrats, intellectual as well as political and social, the term is interchangeable with *hoi polloi*, rabble, canaille, the great unwashed; prefaced by a patronizing adjective it may become the "suffering masses" of the humanitarian or the "eager masses" of the educator; to the political leader it denotes those whose approval and backing he needs only at election time and to the colonially minded western European is most apt to suggest the denizens of unindustrialized, that is, unenlightened, areas east of Suez and south of the equator—or beyond the Vistula. Based chiefly on external criteria, it is an essentially abstract concept and takes on color only when set against the articulate, politically or economically organized, minority operating in a particular institutional context.

In most cases in the past this organized minority was confined to a comparatively thin layer of the population which, in so far as it felt called upon to rationalize its prerogatives, professed to conduct public affairs in the interests of the unclassified residue. There have been few tyrants or oligarchs who have not felt constrained at times to divert and cajole their murmuring legions and tribute payers; and as the ambitions of intermediate groups impelled these groups upward to demand a separately classified status and an exclusive body of privileges, they were not long unmindful of the tactical advantages to be obtained by presenting their own immediate claims as the echo of a myriad voiced mass will.

During the course of these persistently recurring clashes between monarchical, aristocratic, agrarian and bourgeois groups there was gradually distilled a rhetoric from which emerged such initially volatile concepts as the people, the folk, the populace, the masses, liberties of the people and popular sovereignty. Although in the main a by-product of successive group thrusts to power, this incidental rhetoric came in time, especially in the ideological skirmishings among the more objective and systematically minded apologists in prerevolutionary England and France, to acquire an independent principle of growth which served to perpetuate it beyond the group dictated compromises of the revolutions themselves into the era of bourgeois consolidation.

If in the period before the various bourgeois revolutions "masses" may be used, with some approximation of exactness, as an omnibus term to designate the heterogeneous elements excluded from the privileges and perquisites of the intrenched hierarchic orders, its precise implications in the later antihierarchical, professedly egalitarian, social order do not lend themselves to such summary characterization. Once the principle of popular representation had been carried to its ultimate conclusion the older distinction disappeared, at least formally, between active and passive participant in government. Thus from a purely political point of view it might logically be maintained that the term masses, in so far as it has any meaning, comprises the millions who do not hold office; and that from a legal point of view the abolition of older discriminations has transformed the masses into the citizenry.

The explanation for the rapid spread of the concept in a society emphasizing equality is to be sought therefore in the emergence of a hitherto unclassified estate with a new ideology, which has sought to invalidate the abstract political and legal formulae of earlier champions of the excluded orders. In so doing the proletarian ideologists have succeeded in provoking general speculation regarding their hypothesis that the older concepts of equality acquire vitality only when prefaced by economic equality; while the disillusioning realities disclosed in the subsequent working out of the representative principle and in democratic legal procedure have raised still further doubts as to whether the informal privileges accruing from private wealth have not gone far toward counteracting the abolition of the more traditional distinctions between privileged fraction and unprivileged remainder. In striving like its predecessors to clothe its rationale and program in universal terms, the new fourth estate postulated a set of economic and social laws, which in working themselves out would gradually cast off or transform all bourgeois and other nonproletarian elements and generate ultimately a situation in which society and masses would be indistinguishable.

In the meantime, however, the necessity of prodding these slow working laws and of indoctrinating the more articulate and better organ-

ized layers of the industrial workers with a sense of their historic mission has tended, in turning emphasis from the ultimate to the immediate, to enrich the ideology and rhetoric of the dynamic proletarian minority in the urban centers. By practical implication therefore, if not by definition, the proletariat is distinguishable from the masses both in respect to its coherent pursuit of a rationally planned program and in its transmission from generation to generation of a functioning institutional technique (*see* PROLETARIAT). Although the revolutionary proletariat like the revolutionary bourgeoisie of an earlier period has not been unmindful of the rallying power of mass exhortations, mass appeals and mass symbolism, it has not been tempted in the main to confuse its clear cut working hypotheses by adjusting them to the spasmodic and unexpectedly complex realignments and reclassifications which have taken place within the other aggrieved elements of the population since the bourgeois revolutions.

Nor can the varied attempts to undermine the presuppositions of the proletarian ideologists be said to have contributed materially to rendering the concept of the masses more precise. In countries like the United States, where until recently the rhetoric of political and legal egalitarianism has been bolstered by a generally diffused rentier outlook, the hallowed tradition of "we, the people" has left little room for the more invidious epithet. Similarly, although for different reasons, the British tradition of parliamentarism was able, with minor renovations in the form of concessions to newer democratic pressures, to drain off the more threatening upwellings of mass consciousness provoked by the miseries attendant upon the industrial revolution. France, far more deeply infected with the Jacobin-utopian socialist tradition, was accordingly forced to more systematic counterformulations. When it became apparent that the tonic of Michelet's hymns to the undying spirit of the French people was beginning to lose its efficacy, a more enduring substitute was found in the carefully elaborated doctrine of social solidarity, which in postulating a harmonious interworking between the various coordinate elements of the population sought with some success to eliminate the invidious distinctions inherent in such phrases as classes and masses.

The theory of a people, one and indivisible, united in peace and united in war, was a prerequisite of nationalism not only in France but in the other continental countries which were being drawn into an increasingly tense system of alliances and counteralliances. To German ears especially the mystically tinged conception of a creative *Volksseele*, first outlined by Vico and subsequently enriched by the German romantics and their nationalist disciples in France and Italy, provided not only an escape from the jagged realities of a hierarchically ordered society but an effective conscripting slogan. With the post-war Fascist reaction against democratic and parliamentary institutions, the doctrine of a massless people, mystically bound together in the pursuit of a common ideal, has reappeared in intensified and only slightly modified form.

This mystical glossing over of economic realities, which Marx so repeatedly criticized, has also and in a more direct way colored the conception of the masses, as advanced for example, by Bakunin and the *narodniki* in Russia. Indifferent on the whole to the changes wrought by industrialism and urbanization these leaders sought the revolutionary energy exacted by their program among the agrarian masses. Although in their preoccupation with the land and its essentially irrational cultivators they approached much more closely than did the nationalists the essential spirit of the *Volksseele* formulae, their faith in the agrarian masses as a potentially revolutionary force contradicted the primary presupposition of the romantic traditionalists. The attempts of Sorel and his followers to inoculate the industrial and urban proletariat with this irrational mass *élan*, of which like Bakunin they felt the lack in the equations of Marx, have merely served, by reason of their comparatively limited influence, to accentuate once again the implicit divergence between orthodox proletarianism and the cult of blind power as residing in the spontaneous masses. The eventual outcome of the dynamic coalescence of these two strains in the carrying through and consolidation of the Bolshevik revolution remains to be determined, as do in a different sense the relative contributions of the organized third estate and the eruptive neo-Jacquerie and sansculottes to the French Revolution.

In striking contrast to the romantics and the *narodniki*, modern psychologists, concentrated in urban centers and a bit unnerved by memories of the recurring episodes of barricade and street fighting in nineteenth century European capitals, have berated the irrational behavior

of the masses or, more accurately, of the crowds that congregate in cities. Shifting the sphere of gravity from the fields to the street corners, they have expatiated at length upon the irrational attributes of social psychology which the romantics took for granted and extolled. There has arisen therefore in modern scholarly terminology, especially in the German use of the word *Masse*, a somewhat confusing tendency to employ "crowd" and "masses" interchangeably. It is only recently, after a generation or more of Le Bon and his disciples, that the attempt has been made, notably among the German sociologists, to deal with the much broader problem of the interplay between the rational and irrational elements comprising the different layers of the population—rural as well as urban, scattered as well as congregated, latent as well as aroused—especially in so far as this interplay determines the rhythm of revolution, compromise and counter-revolution.

The vagueness and changeability, in point of social content, of the term masses add to its attractiveness as a rallying cry in the battles of words accompanying all contests for power. Both the officeholders and the contenders feel free to interpret the "mind of the masses" and to speculate and to make claims as to the possible course which this essentially unknown quantity in the social-dynamic equation is likely to pursue. The potency of the argument, from whichever side it may be advanced, is enhanced by the unwillingness of either side to submit the case to an actual test. The "revolt of the masses" is not a venture willingly entered upon even by those who stake their hopes on a radical downward revision and reconstruction of the social order or the political state. Barring the cases where the very lowest strata of constituted society are involved and where basic social revolution is the objective, an open provocation of the masses to direct action is generally deemed a dangerous and inadvisable expedient. Even in the case of a fundamental social revolutionary movement, as was the Bolshevik revolution in its preparatory stage, the party instrumental in shaping the movement preferred to keep the masses under check, although in readiness for action. It is not inconceivable that in the negotiations which, according to the Biblical account, Moses carried on with the king of Egypt in the name of the God of the Israelites and on behalf of the people the threat of God's visitation upon the Egyptians was but a symbolic presentation of the danger of bringing the patience of the Israelite masses to the breaking point. But Pharaoh was no more impressed by Moses' claim that he had it in his power to arouse the masses to the point of forsaking their fleshpots than was Judge Gary in 1919 by the threat of William Z. Foster and Samuel Gompers to call out the hundreds of thousands of employees of the United States Steel Corporation. And if the Biblical account is to be relied on, Moses as leader had no easy task in keeping the once aroused masses in check; for, according to the record, God's appointed leader, despite the formal ban on murder, did not secure order and law until his lieutenants had laid low three thousand men, or approximately 2 percent of the masses.

The experience of all time, from the semi-legendary situations to those accurately recorded, shows that there has been little material alteration through the course of history as regards the essential practises of leaders and authorities in dealing with the masses; nor have there been vital changes in the techniques of summoning the masses to action or of preventing them from assertively taking over the control of events. The "masses" formula may be said to be employed in three major ways: when it is advanced by the officeholders, when it is invoked by aspirants to office and when it is asserted by the masses themselves.

The attitude of those in power toward the masses and the part the masses ought to play in the scheme of things does not appear to have deviated greatly since the early stages of historic development. Whether the officeholder be an Assyrian despot, a Roman emperor, a French king, a Russian czar, a president of the United States, a German Social Democrat in the office of the Reich presidency or a communist elevated to a high political power by a proletarian class dictatorship, his procedure, if not necessarily his aims, in dealing with the problem of the masses is dictated by the exigencies of power holding and of continuance in office. Minor deviations, it is true, manifest themselves in particular cases, while procedure as well as aims may vary in proportion to the proximity of the organs of authority to the masses. Thus an authority established by an overturn to which the masses were a party would be likely to differ substantially in behavior from the more traditional officeholder. Conventional procedure and policy would also tend to be discarded in the case of the governing group established in a classless social order, where

authority ceases to be political and becomes entirely functional and where politics as the means by which large numbers of people are moved to activity or prompted to do their share of socially important work tends to become gradually atrophied. Under such a social arrangement the significance of the masses as an entity set off against individuals and classes is likely to disappear. The social order now rising in the Union of Soviet Socialist Republics is rich in potentialities; provided future developments continue to unfold in accordance with the presuppositions and promises of the earlier revolutionary leaders, there may gradually be evolved a basically different attitude on the part of the officeholders toward the masses. Officeholding motivated by the drive for self-preservation and the tendency toward expansion of power is essentially a matter of keeping the categories of persons, presumed to constitute the masses, in a state of suspended mobility, immune to the solicitations of the opposition and yet potentially disposed to rally to the banner of the authority should the latter actually be threatened by the probability of an overt act on the part of the opponents of the regime.

If the strategy employed toward achieving the first objective is generally of an economic nature, that used for the realization of the second aim tends to be primarily psychological. If the masses are protected against hunger and cold, their susceptibility to the inducements of the opposition party will be negligible; but the officeholders cannot count upon active support from the masses unless the latter trust explicitly either in the righteousness or in the invincibility of the institutional status quo. Appreciable economic concessions are sometimes made at the expense of the class in whose interests the governing group operates. These are made either in direct response to pressure coming from the masses or as a countermove to the opposition's appeal to the masses.

The processes whereby the organs of authority strengthen their hold on the minds of the people are necessarily preventive: they seek to forestall pressure. The methods vary over a wide range from intimidation to cajolery and bribery. The priestly type of officeholder refers to the ungodliness of insubordination and the virtue of following the lead. The demagogic type of political officeholder seeks to inculcate in the popular mind the illusion of virtual participation and vicarious glory in the functioning authority. The oppression psychosis may be cultivated for the purpose of cementing a vertical solidarity. Language and religion are used effectively to create unity of outlook and loyalty. The announcement that the state is in danger is another rallying cry for peace time to which the masses will respond; and the effectiveness of the appeal is emotionally intensified by the employment of the paraphernalia of national colors, parades, pompous services and the hysterical summoning up of the horrors which would ensue should the opposition gain a foothold.

While the strategy employed by constituted authority to prevent shifts of the mass mind toward the opposition is nearly always the same, there is a wide variety of rhetoric and forms of appeal. The divine right of kings has ceased to wield the force it once held over the popular mind, but the myth of superiority vested in "gentlemen," in people of "better" stock, still holds sway in democracies as well as in oligarchies. A good illustration of the point is supplied by the recent appeal of the German Fascist governmental heads to turn the masses from the alleged "madness" of the democrats who question the Hitlerite claim that "it was ever the man and not democracy that created values in centuries gone by when democracy destroyed and annihilated the value of individual effort." The fiction of an inherent superiority of the "better" families, from which the officeholders generally come and with whose scions they generally surround themselves, is successfully maintained; in part, as Huxley points out, it is due to a popular misunderstanding of the doctrine of survival of the fittest: "Fittest has the connotation of best and about best there hangs a moral flavor." Such notions as "hundred percentism," "Nordic superiority," "manifest destiny," "cultural superiority," the "white man's burden" and the Christian "duty" of carrying civilization to the four corners of the world are among the more familiar defense complexes with which officeholders seek to neutralize the various types of anti-authoritarianism to which the masses are exposed. The hold thus perpetuated by the officeholders on the mass mind would be unbreakable were it not for the counteracting influences of the contenders for power or aspirants for office, for these constitute a force which cannot be checkmated by bribe or by counterpropaganda. The material basis of power, its accompanying corruption and wastes, work counter to perpetuity of tenure;

power simultaneously tends to become progressively costly and obsolescent. Perhaps, if it were possible for officeholders to remain young, efficient and honest or but reasonably corrupt, they might claim the discovery of the secret of immutability—but such things do not happen.

The adaptation of the masses argument by the spokesmen of a rising power, that is, one aiming to achieve not merely a coup d'état but an actual transfer of power from one social class to another, differs of necessity from the officeholders' course, since it aims at a diametrically opposed objective. But the mechanics or the technique by which the reactions of the masses are brought into play are generically the same. If degrees of sincerity and mannerisms are disregarded, a considerable parallelism of procedure is discernible.

The efforts of the office seekers to identify themselves with the masses are in reality but attempts to induce the masses to merge their interests with those of the aspirants to power. The bourgeois and merchant class promoters of the French Revolution spoke of themselves and of the masses of the underlying population as one and the same "third estate." During the years when they were preparing the Bolshevik revolution the proletarian leaders advanced the view that the class conscious workers were the vanguard and spokesmen of the landless peasantry and undifferentiated city masses. Only after the revolution was firmly established were the hereditary wageworkers, and especially those who came closest to the revolutionary movement, distinguished as the preferred class under the dictatorship of workers and peasants. Efforts to create a conscious harmony, or rather an identity of interests, between the rising group and the masses are accompanied by an intensive intellectual drive and the elaboration of a theoretical foundation for the illusion of identity. If and when the new power is established, legislative efforts are made to fix the identity in terms of law. But sooner or later the illusion passes. The "glorious revolution" of 1688 in England established parliamentarism, but only a thin layer of the English people benefited appreciably by the great reform. The later stages of the American revolutionary movement witnessed a subtle reaction against the egalitarian principles of the Declaration of Independence and the inauguration of a constitution which in many respects embodied the fears of the more privileged groups in the presence of the masses who had identified their material hopes with the leaders, the generals and the orators of the revolution. The French Revolution was much slower than either the English or the American revolutions in forcing a divorce of the erstwhile associates, the leaders and the masses whose eagerness to rebel exceeded in intensity their sense of socio-economic discrimination. The French Declaration of the Rights of Man outlived the honeymoon days of the revolution, but the revolutionary groups constituted no monolithic entity and could not withstand the impact of evolving economic differentiations. With every consecutive step in the revolution a clear, far reaching and widely ramified, although not generally and immediately realized, cleavage of interests was making itself felt. There was no identity of interests, either economic or political, between the bourgeois bureaucrats in the service of the old order, the financiers who had heavy investments in the nobility and opposed the abolition of the monarchy, the wholesale traders and not infrequently monopolist controllers of food and other merchandise supplies, the vast numbers of the notoriously reactionary hired servants, on the one side; and the poor artisans, the peasantry, the emergent industrial workers, the semiproletarian intellectualdom, on the other. The course of the revolution in its successive steps, through the Estates General, the Constituent Assembly, the Convention, the Thermidorian reaction, the rise of Napoleon Bonaparte, was a process of differentiation or decomposition of the masses into contending, conflicting, civil war waging groups.

While the leaders of a new drive for power endeavor, on the one hand, to induce the masses to identify themselves with the major interests of the group for which they speak, they seek on the other to frighten the officeholders into making ever more significant concessions to the contenders for power and their class. How far they will go in invoking the threat of mass violence in negotiating the bargain which they seek to attain depends upon the socio-economic base from which the opposition operates. They may point to the possibility of a "revolt of the masses" as something which both the officeholders and the aspirants likewise dread; they may, on the other hand, identify their group with the masses and use the threat with no attempt to separate the group from the "mob." A reformist opposition will refer to a possible revolt from below as something to be feared,

while the leadership of an out and out revolutionary movement will adopt the second approach. The threat of violence is not infrequently the crucial point in the development of the situation; it tests the relative strength of the opposition and of the authority. The latter will be likely to ignore the threat if it considers its own hold upon the masses certain, whether because of the moral or intellectual weight of its own claims to authority or because of the force it can place in the field to check an advance, or because of both. Or the government will be alarmed, will attempt to silence the opposition, to cajole the masses, constantly change its course and considerably weaken its position in the process. As a factor in hastening the disintegration of the power of the office-holders the strength of the opposition is but of secondary significance as compared to the weakness of the authority itself. The masses are likely to perceive the trend of the contest and gravitate toward the stronger side.

The masses argument in the contest for social power implies a passive state of the masses. At times, however, the masses themselves rise to action. They always do in the climactic moments of a genuine revolution, one which strikes out for a real, not a perfunctory or a purely personal, transfer of power. But the masses are no less likely to be involved to the extent of direct and active participation in mass upheavals, like strikes or local and minor commotions prompted by motives of religion or race. In all such cases the pent up mass energy is likely to break out under the stimulus of a clearly defined, more often than not personalized, and easily attainable goal. The spark which ignites the deposits of social mass energy may be of no special direct significance or even relevancy to the cause of the movement. The stupidity of the officer in charge of the Bastille, the hysteria of the czar in ordering the guards to fire upon the 300,000 unarmed petitioners before the Winter Palace on January 9, 1905, an unverified rumor, almost any untoward incident, may transform the masses from a state of passive, if intensely nervous, suspension to one of aggressive activism. But the distinction between masses in a revolutionary upsurge and a mob, which is but an ordinary crowd in action, appears in connection with leadership and objective. A crowd in action needs no leadership. A ringleader and the momentary excitement of the immediate situation may furnish the necessary release. The storming of the Bastille or the Boston Tea Party might have remained single, isolated and in no way permanently significant incidents had each case not been preceded by a long series of events and cumulative efforts directed toward a highly rationalized objective. It is the preparatory work of the driving force in the contest for power which makes it possible, and at times unavoidable, that the mere presence of a crowd will cause an explosion.

The claim is advanced by certain psychologists that the masses can be brought into play only by the opportunity of destruction and debauchery; that hence the participation of the masses in a revolutionary process ends of necessity with the passing of the revolution from the destructive phase into the constructive; and that therefore the lust of the masses for destruction finds its outlet in the countermovements which seek to destroy the institutional creations of the revolution. Such a thesis, however, is not borne out by the experience of history. The Russian revolutionary state was not attacked from within. The interventions financed from abroad failed precisely because they carried destruction with them; and the revolutionary government, on the other hand, continually and increasingly has had the support of the masses in the constructive enterprises of the new order. Furthermore the actual history of revolution does not indicate that the masses are prompted into action solely by the urge for destruction and that they are destructive when in action. Revolutionary masses are not especially cruel or violent unless they are viciously provoked, and the distinction is to be borne in mind that masses are not mobs. A crowd in a revolutionary setting may appear either in a demonstration of protest or in a rather festive mood when the old power seems to be yielding. Crowds do not as a rule attack the well armed professional upholders of the old order, the soldiery or the police. They usually beseech these not to use arms "against their brothers, sisters, mothers and fathers"; and if the appeal does not help, the armed forces resort to violence and the crowds disperse. If no violence follows and the crowds are not provoked, there is no mass violence. If the pleas of the crowds are successful, there follow fraternization with the soldiers, great rejoicing and festive and peaceful parades to celebrate victory. Unless they act under the trying duress of attack from behind or from concealed sources, revolutionary masses are never destructive; and when attacked they

are no more cruel than, for instance, lynching mobs in the United States. Another even more important consideration, in view of the one-sided formulae of the crowd psychology school, is that the appearance of the masses upon a revolutionary arena need not and does not necessarily take the form of a crowd.

A point of fundamental significance is that disintegration of society and anarchy constitute only a relatively small phase of the revolutionary cycle: they are the circumstances which attend the passing of the old order. Revolution actually begins with the reintegration of the social organism along a new pattern and in response to a new correlation of social forces. It is set in motion when the old legal norms lose standing. The revolution is then law unto itself and its operations are not to be judged by obsolete standards. Any attack of the masses, whether in crowds or by the more effective means of social mass resistance, is, realistically speaking, not violence but the enforcement of the new superlaw promulgated by the very success of the revolution. The soldiery which attacks the revolution is a mob, whereas the masses who defend the revolutionary institutions are its courts of law and the administration of justice.

The rise of the masses to any kind of revolutionary action is generally prompted by a specific psychic urge, a pathology. They are aroused to an active defense of their self-respect, self-determination, inalienable rights and other sublimations of their urgent economic wants as well as their sense of oppression, of inferiority with which an oppressive social order imbues them. An effective appeal by a revolutionary leadership translates economic and political grievances into slogans which hold out the hope of redemption. Thus the rallying force of the slogan "dictatorship of the proletariat" lies not so much in the administrative promises which it carries as in the compensatory vision of a dictatorship which would usher in the economic security and independence so appealing to a class deprived of political status. Bolshevism harnessed this sense of oppression for the purpose of cementing a horizontal or class solidarity. Fascism turned the oppression psychosis into a driving force for vertical or national concentration.

The masses need not relapse into a recessive state after the explosive stages of a revolutionary overturn have passed. A revolutionary government capable of the transition from a political system of managing-class economics to a functional social order would seem to be in a position to bridge the gap between individuals or groups, and masses. It would thus tend to minimize if not eliminate the necessity of resort to psychopathologies in order to draw the masses into an active participation in vital enterprises and would lay the basis for normal group living in integral social copartnership. Politics as the generator of pathologies would give way to organized and integrated functionalism, the basis of rational management of social affairs.

J. B. S. HARDMAN

See: CLASS; CLASS CONSCIOUSNESS; CLASS STRUGGLE; PROLETARIAT; MIDDLE CLASS; INTERESTS; AUTHORITY; EQUALITY; DEMOCRACY; NATIONALISM; CROWD; LEADERSHIP; BUREAUCRACY; PUBLIC OPINION; PROPAGANDA; AGITATION; REVOLUTION AND COUNTER-REVOLUTION; FRENCH REVOLUTION; RUSSIAN REVOLUTION; COUP D'ÉTAT; AGRARIAN MOVEMENTS; SLAVERY; VIOLENCE; INDIAN QUESTION.

Consult: Wiese, L. von, *Allegemeine Soziologie als Lehre von den Beziehungen und Beziehungsgebilden der Menschen*, 2 vols. (Munich 1924–29), adapted and amplified by H. Becker as *Systematic Sociology on the Basis of the Beziehungslehre und Gebildelehre* (New York 1932) chs. xxxiv–xxxvii; Wieser, F., *Das Gesetz der Macht* (Vienna 1926), especially chs. iii, iv, viii, xi, xiv and xvii; Geiger, T., *Die Masse und ihre Aktion* (Stuttgart 1926); Vleugels, W., "Wesen und Eigenschaften der Masse" in *Kölner Vierteljahrshefte fur Soziologie*, vol. ii (1922) no. i, p. 71–80, "Der Begriff der Masse" in *Jahrbuch für Soziologie*, vol. ii (1926) 176–201, and *Die Masse, ein Beitrag zur Lehre von den sozialen Gebilden*, Beiträge zur Beziehungslehre, vol. iii (Leipsic 1930); Colm, G., "Masse" in *Handwörterbuch der Soziologie* (Stuttgart 1931) p. 353–60; Park, R. E., *Masse und Publikum* (Berne 1904); Fueter, E., "Individuen und Massen" in *Jahrbuch für Soziologie*, vol. ii (1926) 202–11; Lehmann, G., *Das Kollektivbewusstsein* (Berlin 1928), especially p. 152–65; Bauer, W., *Die öffentliche Meinung in der Weltgeschichte* (Potsdam 1929–30); Villard, A., *Histoire du prolétariat ancien et moderne* (Paris 1882); Pohlmann, R. von, *Geschichte der sozialen Frage und des Sozialismus in der antiken Welt*, ed. by F. Oertel, 2 vols. (3rd ed. Munich 1925); Rühle, O., *Illustrierte Kultur- und Sittengeschichte des Proletariats* (Berlin 1930); Meusel, A., "Der Radikalismus" in *Kölner Vierteljahrshefte für Soziologie*, vol. iv (1924–25) 44–68; Michels, R., "Psychologie der antikapitalistischen Massenbewegung" in *Grundriss der Sozialökonomik*, vol. ix, pt. i (Tübingen 1926) p. 241–359; Niceforo, A., *Les classes pauvres recherches anthropologiques et sociales* (Paris 1905); Simpson, G. R., *Herder's Conception of "das Volk"* (Chicago 1921); Tillich, P., *Masse und Geist* (Berlin 1922); Berth, É., *Les méfaits des intellectuels* (Paris 1914); Ortega y Gasset, J., *La rebelión de las masas* (Madrid 1929), English translation (London 1932). See also bibliographies under CROWD; LEADERSHIP; MIDDLE CLASS; PROLETARIAT.

MASSIE, JOSEPH (died 1784), English writer on social and economic topics. Nothing is known of his life; he is referred to only as "well known for his political writings" in a bare death notice in the *Gentlemen's Magazine* (vol. liv, pt. ii, November, 1784, p. 876). The deferential inscriptions to statesmen in some of his tracts suggest the favor seeking pamphleteer rather than the detached student, an impression confirmed by the infrequent mention of his writings in contemporary economic literature. The number and format of his publications suggest that he may have been a printer-publisher as well as a writer. From 1750 to 1764 he wrote a series of tracts and pamphlets dealing with a wide range of contemporary social and economic issues. His importance as bibliographer is based on his *Alphabetical Index of the Names of Authors of Commercial Books and Pamphlets* (British Museum, Lansdowne MS. no. 1049), which by December, 1764, had grown to 2377 items and which still serves as the most helpful guide to English economic literature before Adam Smith. The collection on which it was based, gathered by Massie over a long period of time, was sold in 1760 and was thereafter dispersed, lost or hidden.

In 1760 Massie submitted the desirability of the preparation of two works, a "commercial history of Great Britain" and a treatise upon the "elements of commerce illustrated by Applications" to the commissioners of the Treasury and of the Exchequer and sought public employment therefor. Although nothing seems to have resulted from the proposal, the tract in which it was urged is still of interest as defining a need and suggesting an early conception that economic principles must rest upon economic induction.

His *Essay on the Governing Causes of the Natural Rate of Interest* (London 1750), written two years before Hume repeated—or, according to Marx, borrowed—the contention, is important in the pre-Smithian discussion of profits whether or not it is entitled to the distinction, accorded it by many critics since Roscher, of refuting the direct association of the rate of interest with the amount of money.

JACOB H. HOLLANDER

Consult: Palgrave, R. H. I., *Dictionary of Political Economy*, ed. by H. Higgs, vol. ii (London 1923) p. 706–09; Hollander, J. H., Introduction to reprint of *Essay on . . . the Natural Rate of Interest* (Baltimore 1912); Seligman, Edwin R. A., *The Shifting and Incidence of Taxation* (5th ed. New York 1927) p. 60, 93–94.

MASSINGHAM, HENRY WILLIAM (1860–1924), English journalist. The most brilliant Liberal publicist of the period immediately preceding the World War, Massingham tried to raise the craft of journalism to an ambitious art. His career illustrates both the defeat of personality in journalism by the dictatorship of capital and the political evolution of a generation from liberalism toward socialism.

He was the son of a radical Methodist preacher and began work at seventeen on the *Eastern Daily Press* of Norwich. At thirty he was editor in chief of the London *Star*. Shaw and other early Fabians wrote in this lively vehicle of radical thought, which focused the rising social consciousness around the London dock strike and the London County Council, then the pioneer of municipal socialism. From 1892 as literary editor and from 1895 as editor in chief of the *Daily Chronicle* he created a new type of newspaper which aspired to leadership in both literature and politics. With a brilliant staff to back him he seemed to inspire all mobile and sensitive opinion in Great Britain. Suddenly in 1899 the hitherto passive hand of ownership forced the resignations of Massingham and his staff because they opposed the Boer War. In 1907 he again acquired a personal organ in the London *Nation*, which he made the most readable and influential weekly of his time. Before 1914 it criticized the policy that led to war; thereafter it supported the war and was the leading advocate of a negotiated peace. In 1923 the owners forced the resignation of the staff chiefly because of Massingham's vehement opposition to Lloyd George.

Impulsive and sensitive, wielding a forcible pen with a rare sense of literary style, Massingham was not a systematic political thinker. He rejected both doctrinaire individualistic liberalism and Marxism. Henry George, Tolstoy and the Fabians all helped form his outlook. His sympathies ranged him on the side of such "underdogs" as Irish peasants, English workers, Boers, Indian and Russian revolutionaries. His faith in Liberalism, the historic party of progress, persisted until Lloyd George destroyed it in Ireland and by his war policy of the "bitter end." Although Massingham called himself a Liberal until 1923, when he joined the Labour party, the *Nation* supported the latter as early as the general election of 1918.

H. N. BRAILSFORD

Consult: Massingham, H. W., *H. W. M., a Selection from the Writings of H. W. Massingham*, ed. by H. J. Massingham (London 1925).

MASSON, FRÉDERIC (1847–1923), French historian. While serving as librarian of archives in the Ministry of Foreign Affairs from 1869 to 1880 Masson devoted his researches to eighteenth and nineteenth century diplomatic history, publishing: *Le département des affaires étrangères pendant la Révolution, 1787–1804* (Paris 1877), *Mémoires et lettres du cardinal de Bernis* (2 vols., Paris 1878), *Le marquis de Grignan* (Paris 1882, 2nd ed. 1887) and *Journal inédit du marquis de Torcy* (Paris 1884). His growing Bonapartist sympathies, however, impelled him to resign his official posts and to devote himself exclusively to the history of the First Empire. His works include more than sixty volumes besides a large number of articles and speeches. He had access to many private documents, and he gathered together an important collection of Napoleonana, which he bequeathed to the library of the Institut de France. His outstanding work, *Napoléon et sa famille* (13 vols., Paris 1897–1919), which typifies his general methodology, sought to correlate Napoleon's public policies and attitudes with his more intimate character and private life. Thus the early history of the empire was to be interpreted primarily as a reflection of the struggle between the Bonaparte and Beauharnais families for domination of Napoleon; but once the emperor was assured of his procreative powers he became obsessed with the idea of a legitimate succession and definitely broke with the earlier revolutionary movement. Masson's mastery of vivid and lifelike detail in the manner of Taine was offset by overcredulity in regard to sources and by overemphasis of minor individual relationships. But his violent loyalties were instrumental in stimulating interest in the personality of Napoleon and a more sympathetic appreciation of him, if not of the imperial regime.

RAYMOND GUYOT

Consult: Caron, Pierre, in *Revue d'histoire moderne et contemporaine*, vol. v (1903–04) 556–74.

MASTER AND SERVANT. *See* LABOR LEGISLATION AND LAW; LABOR CONTRACT; EMPLOYERS' LIABILITY.

MAS'ŪDI ABU-AL-ḤASAN 'ALI, AL-(died *c.* 956), Moslem historian and geographer. The writings of al-Mas'ūdi, styled "the Herodotus of the Arabs," ushered in a new era in Arabic literature, that of the historical anecdote. As a young man al-Mas'ūdi, who belonged to the Mu'tazilah, a rationalistic religious sect, undertook a journey in quest of learning from his native Bagdad into almost every country of Asia and into Zanzibar. He spent the last years of his life in Syria and Egypt compiling the material thus collected into a thirty-volume work which has survived in an epitome, *Murūj al-Dhahab wa-Ma'ādin al-Jawhar* (Meadows of gold and mines of gems), completed in 947. In this historico-geographical work the author, with catholicity and truly scientific curiosity, carried his researches beyond the typically Moslem subjects into Indo-Persian, Roman and Jewish history and religion. His compilations resulted not in a systematic narrative but in disproportional sketches portraying public life, private manners, social affairs and literary achievements. Shortly before his death al-Mas'ūdi summarized his former writings in *Kitāb al-Tanbīh w-al-Ishrāf* (Notification and review; ed. by M. J. de Goeje, Bibliotheca Geographorum Arabicorum, vol. viii, Leyden 1894).

Like most other treasures of historical and geographical lore written in eastern languages, al-Mas'ūdi's works remained inaccessible to mediaeval occidental readers. De Meynard and de Courteille made a French translation, including the text, of *Murūj* (*Les prairies d'or*, 9 vols., Paris 1861–77). De Vaux translated *al-Tanbīh* under the title *Le livre de l'avertissement et de la revision* (Paris 1898). But al-Mas'ūdi's influence over Arab authors was second only to that of al-Ṭabari. Ibn-Khaldūn considered him "a veritable leader for all historians."

PHILIP K. HITTI

Consult: Carra de Vaux, Bernard, *Les penseurs de l'islam*, 5 vols. (Paris 1921–26) vol. i, p. 95–105; Nicholson, R. A., *A Literary History of the Arabs* (2nd ed. Cambridge, Eng. 1930) p. 352–54; Brockelmann, Karl, *Geschichte der arabischen Litteratur*, 2 vols. (Berlin 1897–1902) vol. i, p. 143–45; Huart, C., *Littérature arabe* (Paris 1902), tr. by Mary Loyd as *A History of Arabic Literature* (London 1903) p. 182–83.

MATCH INDUSTRY. While the invention of the match dates from the beginning of the industrial revolution, some of the elements of match-making precede that period. White, or yellow, phosphorus was discovered by Brand of Hamburg in 1673, and in 1680 the Englishman Godfrey Haukwitz discovered ignition of sulphur and phosphorus by friction. But the first friction match for practical purposes was not produced until 1827, when the English druggist John Walker rubbed along a strip of sandpaper a splinter of wood that had been dipped into a mixture of chlorate of potash (which had been

discovered by Berthollet in 1786) and sulphide of antimony. The use of these chemicals in the friction matches sold by Walker and others in tin boxes provided with strips of sandpaper was found unsatisfactory; and it was not until the 1830's that experiments were made with dipping into yellow phosphorus, first by the Frenchman Charles Sauria in 1831 and later by Kammerer of Württemberg, who opened one of the first match factories on the continent. Between 1835 and 1845 the production of lucifer matches increased rapidly throughout Europe; Vienna was the largest single center. In 1836 the first manufactory in the United States was established in Springfield, Massachusetts.

These early match factories were based entirely on hand labor, mainly that of women and children, and were housed in small unventilated rooms. The poisonous phosphorus vapors resulted in serious lung complications, in digestive disturbances and in phosphorus necrosis of the jaw, first discovered in 1838 in Vienna. Danger of fire and explosion was also present. Match manufacturing was prohibited in some of the German states in the late 1830's. In 1844 Professor Pasch of Stockholm made the first safety match without sulphur or phosphorus, and in 1845 the Viennese chemist von Schrotter discovered the non-poisonous red phosphorus. Prohibition by the canton of Zurich in 1846 of the use of white phosphorus in manufactures was followed by similar legislation in other regions of Switzerland and by national legislation in 1879. In 1864 the French chemist Lemoine discovered another non-poisonous substitute for white phosphorus, sesquisulphide of phosphorus; but this was not put into available form for match manufacturing until 1898, through the patented processes of Sévène and Cahen. It was used thereafter mainly in the match industries of France, Great Britain and the United States. In 1906 an international agreement was reached to refrain from the use of white phosphorus. This agreement, the first of its type, was found necessary because of the intense international competition in the match trade and the humanitarian agitation aroused in the 1890's and the early portion of the twentieth century in France, Belgium, England and Austria. Despite numerous investigation commissions since 1828 Austria passed no legislation before 1906; in the period between 1866 and 1875 there were 126 cases of necrosis of the jaw reported in Vienna alone. In Great Britain 102 cases of necrosis of the jaw, of which nineteen were fatal, were reported up to 1899. It was estimated in 1909 in Great Britain that less than 1 percent of the workers had been affected by the disease, in Switzerland prior to legislation 1.6 to 3 percent and in France 2 to 3 percent. The signatories to the agreement were Austria, Denmark, France and its colonies, Germany, Great Britain and the crown colonies, Italy, Luxemburg, the Netherlands and the Dutch Indies, Spain and Switzerland. New Zealand, Hungary and Mexico joined in 1911, Canada in 1914. The United States did not join in this agreement, but in 1913 the Esch-Hughes Act by means of a prohibitive tax made unprofitable the use of white phosphorus, which represented a manufacturing cost of only 6 percent less than the other forms. Until 1919 and 1922 respectively Sweden and Norway prohibited the use of white phosphorus only in home consumption. In 1919 the agreement of 1906 was reaffirmed by a new agreement, which included Poland, Czechoslovakia and the Irish Free State. Russia previously to the World War had no regulation and Japan did not prohibit the use of white phosphorus until 1922, although it had extremely careful regulations against employing persons with carious teeth, regulations as to the separation of the various processes and as to food, clothing and the like. Rumania passed prohibitive legislation in 1924, China and Palestine in 1925 and Bulgaria in 1926. Some dangers remain in the use of sesquisulphide, which acts as an irritant, causing conjunctivitis, oedema of the eyelids and skin eczema; these may be prevented, however, by precautionary measures.

Although the match industry has never been large, it developed rapidly as consumption demands arose, particularly in highly urbanized countries, where the gas stove replaced the wood stove for cooking, and with the increased consumption of cigarettes and cigars. Great Britain's consumption of matches in 1925 was estimated at five per capita per day, more than double that of 1871, and consumption in the United States was probably still higher. In India the consumption is estimated at one per capita per day.

The development of the industry was also aided by the perfecting before the end of the nineteenth century of almost all the automatic machinery still in use today, which has mechanized every process from the drying and splinting of wood and the mixing of chemicals to dipping, packing, box manufacturing and the like. The principal manufacturers of this ma-

chinery were concentrated in Sweden, Germany and the United States; and with the development of the Swedish world trust German and American machine manufacturing fell under its control.

The labor force in most countries is predominantly composed of women, and in some of the backward countries child labor is largely used. In China indentured child labor and a thirteen-hour day were still in force in 1925. In India female labor is so abundant and cheap that child labor is not employed. Where labor is so cheap, the "cottage" industry and hand processes persist. In China, Japan and India manufacturers follow the policy of recruiting labor from the provinces and of company housing. In 1910 the use of child labor elsewhere was cited as a competitive advantage by American manufacturers, who also claimed that daily wages in Germany were $.835 to $.955 and in Belgium $.68 to $1.40 as compared with $2 to $3.30 in the United States. British manufacturers cited the difficulties of foreign competition in pointing to a fourfold increase of wages in the British match industry between 1900 and 1920 and a reduction of hours from sixty to forty-seven during the same period. Whereas American workers are not organized in labor unions, English match workers as early as the 1880's went on strike and formed a union of eight hundred women. The English match industry was one of the first to enter into the Whitley Councils scheme, which fixed for it a minimum rate of wages, a forty-seven-hour week, annual holidays and additions to the statutory workmen's compensation. Following an order of the Council for the Match Industry in 1925 that unorganized workers would not be entitled to representation, the industry achieved a 90 percent trade union organization. Swedish and German workers have been able to secure relatively favorable working conditions through comprehensive trade union organization without the necessity in recent times of conducting major strikes. Of the three thousand German workers two thirds are women; of the six thousand Swedish workers only half are women. In 1930 wages in Sweden were 2400 crowns annually for men, 1500 for women and 1300 for minors. Organized labor was recognized by the French government monopoly and has played an active role in the strike of 1879, in its agitation for the prohibition of white sulphur and in the protest against the control of the Swedish trust. In recent years strikes have occurred in the match factories of India. Even after post-war consolidation labor costs remain everywhere a competitive item.

At the present time the struggle for raw materials is not important. Because of the fact that lumber is the largest item in material costs, the nearness of Sweden to the aspen forests of Russia, Finland and eastern Europe together with its superior technology secured for it the position of supremacy over Austria, which up to 1855 had been the principal export country. In Great Britain and the United States Canadian pine has been used, but this wood requires more careful grading than aspen and is less satisfactory. Japan's nearness to timber supply has been one of the factors in the great development of its industry since 1870, and in recent years the Indian match industry has turned increasingly to its own government forests for timber. The chemicals used—chiefly potassium chlorate and compounds of sulphur for the head and dextrin, amorphous phosphorus and antimony sulphide for the striking surface—have not involved any serious problem of supply. The chief source of supply has been Germany, although more recently Sweden, Japan and to some extent Great Britain have developed their own production of chemicals for use in domestic manufacture and for export. Russia is engaged in an attempt to supply its own chemicals. Sweden and Japan also produce the paper, printing and other items needed in match manufacturing.

Because of these factors and since the establishment of a factory required relatively little capital, the period between 1880 and the World War witnessed a vast number of small workshops in every country, including China and Japan. Even in countries with a vast internal market, such as the United States, Germany and Great Britain, the industry was soon faced with overproduction and with domestic and foreign competition. In the course of this struggle several governments which had originally taxed the match industry established monopolies over it. Russia in 1848 had been the first country to establish a match tax, but because of systematic evasions, which were made fairly easy by the small size of the match factories of the time, the tax did not succeed in raising the projected revenue. France established a similar tax in 1871; this likewise failed and was replaced the next year by a monopoly. Events followed a similar course in several other countries, and before the war monopolies had been established also in Spain, Portugal, Greece, Serbia and Rumania. The monopoly may be either a full or

a trading monopoly and usually covers lighters and other devices as well as matches. The economic reactions of these monopoly measures upon the match industry were far reaching: numerous match factories had to be shut down to make the monopoly profitable and the import and export of matches were gravely affected. The measures had less important effects upon consumption, which is scarcely affected by price movements. In France the profits of the match monopoly rose from 19,800,690 francs in 1891 to 30,636,483 in 1911. During the post-war period prices rose 100 percent and profits rose in 1922 to 67,000,000 francs, forming a considerable contribution to the national income. Labor conditions in the government factories are carefully regulated; before the substitution of amorphous phosphorus vast amounts were paid out in compensation for sickness. An investigation of the operations of the industry in 1924 showed a rising cost of production in contrast with the falling costs in the privately owned large factories elsewhere.

The match industry has been most successful in the United States and Sweden; the former country has supplied chiefly its own large domestic market, the latter the world market. In the United States the industry has been protected by a high tariff since 1890 and the processes of consolidation and of technical progress began early. In 1869 there existed seventy-five factories with a total force of 2556 workers. In 1881 the Diamond Match Company became the dominant firm in the industry. By 1909, although the number of factories was reduced to twenty-six, the value of the total production, $1,353,000, was double that of 1869 and the number of workers had increased to 3631. In 1895 the patents of the Diamond Match Company were worth fully as much as its capital stock; it began to purchase timber areas and to promote plants in foreign countries, where it acquired patent protection usually on a basis of retaining a controlling interest in the foreign enterprise. It even anticipated the later policy of the Swedish trust, erecting factories in foreign countries for the purpose of drowning protests against outside competition. In 1896 it erected in Liverpool the largest match factory then existing. In 1898 a branch company was organized in Switzerland, another began operations in Brazil and other plants were projected or in operation in Germany, Peru, Canada and Cape Town.

In 1899 the Diamond Match Company established a community of interests with the Continental Match Company, controlled by Edwin Gould, which had three large factories in the United States. Of sixteen factories reporting in the discussion of the Esch-Hughes Bill in 1911 five were controlled by the Diamond Match Company, which produced 70 percent of the industry's output. Although it claimed to produce matches with "25 percent of the manual labor of any other known processes in the world," the price of matches almost doubled under its control. In 1931 seventeen factories employing 3200 workers produced goods of a total value of $17,927,000—a decrease of 12 percent over 1929. Imports in the same period decreased from $3,442,690 to $1,435,497.

A similar development had taken place in Sweden. Large scale production had been in evidence as early as 1863 by the Jönköpings Tändsticksfabrik, one of the engineers of which, Alexander Lagerman, perfected the match automatic in 1892. In 1903 severe competition in the world market, which was progressively diminishing the profits of the Swedish industry, led to the consolidation of six of the leading match factories into the Jönköpings och Vulcans Tändsticksfabriksaktiebolag. In 1913 at the initiative of Ivar Kreuger the other match factories also consolidated into the Aktiebolag Förenade Svenska Tändsticksfabriker; the production of the latter, however, was only one third that of the Jönköpings concern. In the period between 1861–65 and 1913 the number of workers increased from about one thousand to about seven thousand; exports from an average of 1,700,000 kilograms to 34,600,000; the value of match products from an annual average of 508,000 crowns to 17,800,000. In 1929 about six thousand workers were employed and the value of match products was about 38,000,000 crowns.

Other important producing countries in the western world market were Belgium, Austria and Russia and in the far eastern market Japan. In the pre-war period on the basis of number of workers employed in the industry Japan and Russia were in the lead with 21,400 and 15,668 respectively, while Italy, Sweden, Germany, Austria, Hungary, Great Britain and the United States followed in the order named. Available production figures, however, showed in 1910 Sweden and Norway together to be of first importance, with 24,290 gross boxes per annum; the United States was a close second, followed by Great Britain, Germany and Austria. Export figures for 1910 revealed Sweden's predominance to be even more pronounced in the world

market. In practically every one of these countries, notably in Great Britain, Germany and Belgium, the pre-war period was marked by a series of consolidations; these were unsuccessful, however, in checking overproduction and severe domestic and foreign competition.

After the World War competition in the international field was even more intense. Japan had increased its production; Poland had set up a government monopoly which came increasingly to supply its consumption needs; and Czechoslovakia and the Baltic countries, all of which were near to sources of lumber supply, began to develop their industries. In 1919 and 1920 plans were made for an international match cartel under the leadership of the Swedish match industry, but these endeavors failed and the agreements proved to be valueless whenever their violation involved any profit. Since the problem of overproduction could not be solved by cooperation, the strongest industry, the Swedish, finally solved it by defeating all others in ruthless competition.

Weakened by outside competition, the Jönköpings and the Kreuger Aktiebolag Förenade Svenska Tändsticksfabriker consolidated into the Svenska Tändsticksaktiebolag in 1917, and it was this trust which soon gained control of the world match industry. In 1920 it bought up the seven independent match factories in Belgium, an important competing country, and soon thereafter purchased stock in the Belgian trust. It reached an all inclusive agreement with the match industries in the Danubian countries, formerly so powerful. It bought up factories in the neighboring countries of Norway, Denmark, Finland, Estonia, Latvia and Lithuania, which although not yet large exporters were potential rivals. In 1923 it established the powerful International Match Company in the United States as a selling agency. In 1924 it began operations in India; prior to the war Sweden had supplied 30 percent of the total Indian consumption, a proportion later decreased by Japanese competition. Confronted by a high tariff wall it proceeded to purchase control of the local factories; in 1927 it operated six and in 1931 eleven of the largest factories in India. Its attempts to enter Japan were temporarily resisted, but it finally gained control of one of the two large Japanese match companies, which in turn had interests in China. In the United States, where as in India it was barred by a tariff wall, it first gained control of the Federal Match Company and in 1931 through a secret deal bought up the new stock issued in connection with an increase of capital of the Diamond Match Company.

In countries in which match manufacturing was a state monopoly and which were at the time in need of national loans the Svenska Tändsticks embarked upon a new policy of granting large loans at a low rate of interest in exchange for the grant of a monopoly or for a large share in such a monopoly. In 1932 the Svenska Tändsticks had a monopoly in Germany, Estonia, Lettland, Lithuania, Danzig, Poland, Rumania, Jugoslavia, Greece, Turkey, Ecuador, Peru, Guatemala, and a very strong position in France, England, Switzerland, Austria and other countries. The control had a legal foundation and rendered the position of the trust far more invulnerable than in those countries where it held an ordinary commercial monopoly and where there was always the danger of the establishment of new factories or of outside competition (especially from Russia in the period between 1926 and 1929).

This policy of expansive and extensive control was financed by means of a continuous reissue of stock, a good portion of which was given in exchange for the control of already existing local trusts. Direction and the issue of stock always came from Stockholm. Since under the Swedish law foreigners were permitted to hold no more than one fifth of the stock, the new issues were almost entirely of preferred B stock, each with a thousandth of a vote. As the new issues were sold on the stock markets of the world, usually far above par value, the proceeds were used for further expansion. In 1918 this stock was increased to 45,000,000 crowns. In 1922 the share capital was doubled, two fifths of the new stock being issued on the British market; in 1924, 900,000 B shares were issued, of which 271,500 were put on sale in the stock market. By 1931 the capital had reached 360,000,000 crowns, or $96,480,000, of which there were 2,700,000 B shares and 900,000 A shares. Svenska Tändsticks had penetrated the stock markets of the world.

The multifarious interests were largely consolidated in four great subsidiaries, the original two Swedish concerns, the British Match Corporation of London and the International Match Company. Some of the monopoly rights were owned directly by the parent Swedish firm; others belonged to the American subsidiary and others to Kreuger and Toll, which played an important part as the financing institution; still others were owned jointly by other firms. The

parent Swedish firm obtained only a small part of the capital necessary for the building up of the concern. The American subsidiary was founded especially in order to raise this capital, and it is for the same reason that such importance was attached to the development of relationships with England. The capital invested in the entire concern was estimated to total between two and three billion crowns. The ownership of factories was also concentrated in the parent Swedish firm and in the British and American subsidiaries; in 1931 the trust owned about 250 match factories in forty-three countries, employing over sixty thousand workers, as contrasted with sixty-two factories in 1924. In addition it controlled vertically and horizontally important industries which in some cases incidentally controlled raw materials and some of which had previously been the property of the British, American and Swedish trusts. These properties in many cases were more valuable than the actual match factories.

In only a few countries did the match industry remain free from the control of the Swedish trust. Of these Spain, Bulgaria and the South American and near eastern countries did not produce in sufficiently large amounts to menace the position of the trust. Italy was somewhat more important, especially as its exports increased after the war. It was Russia which proved a powerful rival. Its pre-war production of 4,500,000 boxes was almost equalled in 1926; exports then also stood at the highest pre-war figure. In the period between 1927 and 1930 Russia's production increased 50 percent and export trade was considerably extended. Its competition was felt by the Swedish trust particularly in Germany and England, but with the conclusion of the German monopoly agreement in 1930 these markets were lost to Russia. For a time it seemed that the Swedish match industry might eliminate Russian competition or possibly reach a formal agreement with the Soviet government.

Like every international trust the Svenska Tändsticks aimed theoretically to manufacture at the most advantageous places throughout the world (conceived as a single economic area), thus attaining the highest possible productivity of labor with a resultant lowering of prices to consumers and the achievement of the maximum of profits. An obstacle to the absolute attainment of the first goal was formed by the desires of various nations to develop a more or less self-sufficing match industry at all costs. In adapting itself to this policy by buying up factories in countries with high tariff walls, the trust, which might have been expected to favor free trade, aided the high tariff policies, for example, in India and Australia. Everywhere, however, production was rendered more efficient, unprofitable plants were dismantled and newly acquired factories were technologically modernized. In Sweden by the establishment of stricter discipline and by the replacement of man power by electrical power wherever possible the trust achieved a 10 percent increase in the production of the individual worker within the decade ending in 1924. Even greater economies were effected in such countries as India, where labor costs decreased by two thirds in three years. Nevertheless, because of lack of adequate data neither the extent of the economics in the sphere of world production nor that of the savings in the field of distribution can be determined exactly. The extensive advertising campaigns which were begun when the trust was gaining a market were always reduced to a minimum after the market had been conquered. Likewise the trust could reduce to a minimum the costs of purchasing and selling. As a purchasing agent its development along the lines of a horizontal and vertical combine must have involved considerable economies.

Despite this increased efficiency match prices rose continually. It was claimed that they had been abnormally low in the period of competition and of rising or new taxation. But match prices rose much higher than the general price level; and in only a few countries and to a limited extent—as, for instance, in the cooperative production in Germany and Finland—were consumers able to protect themselves against the price fixing policy of the trust. Even where prices were fixed by the government, as in Peru, the dominant role of the trust caused this price fixing to be only apparently a matter of public policy. The increased prices were reflected in the trust's increased profits, even on its overcapitalization. A 5 to 10 percent rise in prices might be barely noticed by the retail consumer, but a 10 percent rise actually meant an increase of 100 percent in profits for the trust. At the end of 1923 the International Match Company claimed a profit of over $3,900,000 on sales of over $16,500,000 and the following year a profit of $4,800,000 on sales of over $20,500,000. In the last few years preceding its breakdown the dividends paid by the trust ranged from 12 to 15 percent.

The organization of the trust was in fact designed rather to bring about this end than to effect the theoretical economies of a production for an international market. The structure of the trust, the concentration in voting power and the complexities involved by the financing program of its directors led inevitably to uncontrolled and uncontrollable policies, of which Kreuger's manipulations were only one manifestation.

The collapse of the Swedish match trust in 1931 created an entirely new world situation. At the end of 1931 the Svenska Tändsticks had outstanding obligations totaling 457,000,000 crowns besides guarantics, collateral and security obligations, which probably rose considerably during the first few months of 1932. A few months after Ivar Kreuger's suicide, when there fell due short term obligations which could not be met, the Svenska Tändsticks was granted a moratorium. A great part of the share capital of 360,000,000 crowns and the reserves of 245,000,000 crowns were considered lost. Its most important subsidiary, the American International Match Company, has already declared itself bankrupt.

The future of the trust—and hence that of the world's match industry—is uncertain. It is possible that a new firm may buy up the trust's assets and rights; it is likewise possible that Svenska Tändsticks may be able to continue operations. But there also exists the possibility that the trust will disintegrate, that the match industries of the various countries may again become independent of Stockholm and that bitter competition will begin once more. But the new competitive struggle would be fought on a new basis. In Poland and the Baltic states—and in fact in almost all the countries in which the Swedish match trust shared a manufacturing monopoly—the old factories have been modernized and new ones built, so that these countries produce much more efficiently than before the World War; indeed they are just as strong competitively as the Swedish factories. Should a new competitive struggle break out in the world market, the predominant position of the Swedish match industry would be imperiled for the first time and the ranks of Sweden's former competitors—Belgium, Austria, Japan and Russia—would be joined by other countries, some of which could probably offer matches at lower prices than the Swedish factories.

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See: COMBINATIONS, INDUSTRIAL; HOLDING COMPANIES; MONOPOLIES, PUBLIC; INDUSTRIAL HAZARDS; INDUSTRIAL HYGIENE.

Consult: Schaff, Erich, *Internationale Verflechtungen in der Zündholzindustrie: Ein Beitrag zur Kollektivierung der modernen Wirtschaftsordnung*, Hessische Beiträge zur Staats- und Wirtschaftskunde, vol. ii (Leipsic 1929); International Labour Office, "Lucifer Matches" in *Occupation and Health*, Brochure no. 7 (Geneva 1925); Clark, V. S., *History of Manufactures in the United States*, 3 vols. (new ed. New York 1929) vol. iii, p. 292–93; United States, Congress, House of Representatives, Ways and Means Committee, *White Phosphorus Matches: Hearings*, 3 vols. (1910–12); Dixon, W. H., *The Match Industry: Its Origin and Development* (London 1925); France, Commission Chargée d'Étudier les Questions Concernant l'Organisation et le Fonctionnement des Monopoles des Tabacs et des Allumettes, *Rapport présenté par M. André Citroën* (Paris 1925); Rives, Marcel, *Le monopole des allumettes en France* (Paris 1925); Grotkopp, Wilhelm, *Der schwedische Zündholztrust*, Nordische Studien, vol. viii (Brunswick 1928); Freude, Siegfried, *Der schwedische Zündholztrust*, Nürnberger Beiträge zu den Wirtschaftswissenschaften, vol. viii (Nuremberg 1928); Schwarzenberger, Georg, *Die Kreuger-Anleihen. Beitrag zur Auslegung der internationalen Anleihe- und Monopolverträge sowie zur Lehre vom Staatsbankerott* (Munich 1931); Marcus, Alfred, *Kreuger und Toll als Wirtschaftsstaat und Weltmacht* (Zurich 1932); Mennevée, Roger, *Monsieur Ivar Kreuger le roi des allumettes* (Paris 1932); Sparling, Earl, *Kreuger's Billion Dollar Bubble* (New York 1932); Hurth, Carl, *Die deutsche Zündholzindustrie in der Nachkriegszeit*, Münchener volkswirtschaftliche Studien, n.s., vol. viii (Jena 1929); Spickermann, Edmund, *Die Bedeutung des Zündholz- und Tabakmonopols fur die Finanzgestaltung des neuen Polens* (Lodz 1928); India Tariff Board, *Match Industry*, vols. i–iv (Calcutta 1928–29); Vakil, C. M., and others, *Growth and Development in Modern India* (Calcutta 1931) ch. xiii; "Match Industry in China" in *Chinese Economic Journal*, vol. x (1932) 197–211.

MATERIALISM as a philosophy arose out of an attempt to substitute for religious cosmogonies an account of the world drawn from principles and materials familiar to man in everyday activity. Although the theories of the early Greek physicists that the original stuff or abiding principle of things (*physis* has been variously interpreted) is water, air or fire already express a materialistic approach, it was not until Democritus that materialism emerges as a systematic philosophy. The fundamental proposition of Democritus' thought is that nothing exists save the movement of atoms in the empty void; all else is illusion. "By use there is sweet, by use there is bitter; by use there is warm and by use there is cold; by use there is color. But in sooth there are atoms and the void." Differences in quality are reduced to differences in the number, size, shape and configuration of atoms, whose

movements are determined by eternal and necessary law. The soul itself consists of fine, smooth atoms, whose motion produces the phenomena of life. There are no immaterial active entities. Here are expressed in the crude form of the science of the day the characteristic doctrines of almost all subsequent materialist philosophy.

Epicurus and his followers took over the whole of the Democritean atomism. Their only modification was to introduce in the primal downward course of atoms a chance deviation in order to set up the swirl out of which in time the world was generated. In Epicurus and Lucretius the materialist philosophy serves the purpose of what may be called personal hygiene or personal salvation. It is invoked to free men who have the means to enjoy leisure from the fear of death, the gods and the blows of adversity. Since the soul is composed merely of the most rarefied and mobile of the atoms, death is nothing but their dispersion into space and the annihilation of all consciousness; and as there is no pain where there is no consciousness, a wise man will not fear death. Denying that purposive acts from without can ever interfere with the natural course of atoms, Epicureanism relegated the gods of popular theology to the stellar spaces, where they live the lives of Epicurean philosophers in complete independence of society. Pleasure or the absence of pain—produced by gentle motions within the body—is the chief good. Since the locus of consciousness is the material soul, the only evil which man can experience is disturbance of mind. Indeed pain of the body is only one type of disturbance of mind and can be banished by cultivating the arts of philosophy and conversation. From quite different premises and with a different motivation the stoic philosophers embraced a thoroughgoing materialism of a peculiar character. The good is defined not as a quality of human desire or consciousness but as the fulfilment of objective and necessary laws of one physical whole in which all events are predetermined. Man's thought and emotion, his ideas of the good and the right, are merely expressions of the organization of bodies. Morality is not only natural but literally and actually physical. The universal and eternal "natural laws of justice based on reason," to which later western thought always appealed in opposition to the conventional theory of morality and from which were derived the revolutionary doctrines that slavery is against nature and that all men are born equal, were not put forward as ethical resolutions but as propositions in physics.

Although Aristotle had polemicized against Democritus and atomists in general on the ground that they could not properly explain the transition from potentiality to actuality which his own doctrines of final forms and inner teleology were designed to meet, none the less certain elements of the Aristotelian philosophy provided the only materialistic vestiges in the spiritualistic tradition of Platonized Christianity. Aristotle's naturalism, which ruled out the Judaeo-Christian dualism between the creator and the created through the doctrine of the eternity of the world and of motion, reappeared in the Averroism of the thirteenth century. Aristotle's "behavioristic" psychology, which taught that the soul was the form of the body and consequently could not exist in independence of the body, came into conflict with the orthodox doctrine of immortality. Aquinas himself by accepting the Aristotelian view that matter is the source or principle of individuality (*principium individuationis*) barely escaped the charge of heresy on the ground that this militated against the existence of immaterial individuals, such as angels and the souls of the dead unhoused in any bodies until the day of resurrection.

Even more important, Aristotle's contention that only concrete individual substances, or wholes, are real offered a basis for the nominalists to attack the existence of substantial forms in both their Platonic (*universalia ante rem*) and Aristotelian (*universalia in re*) forms. The social implications of the nominalistic interpretation of universals were enormous. It meant first of all an attempt to break down the intellectual authority of the church with the heretical doctrine of the twofold, or double, truth. Further by maintaining that only individuals were real it suggested that all associations—from the holy and universal church to the secular provincial guild—had a derivative status and could claim no higher reality or rights than the activities and desires of its individual members. Theoretically nominalism justified an appeal to natural rights doctrines in politics; practically it expressed the dissident tendencies of local church organization in opposition to a central revenue gathering agency whether situated at Rome or at Avignon.

The historical resurgence of materialism in modern European thought was marked by the introduction of experimental method and the development of mechanistic atomism among the philosopher-scientists of the sixteenth and seventeenth centuries. Stimulated by the needs of industry and war, men like Leonardo da Vinci

and Galileo were led to an investigation of the controlling conditions of natural phenomena. This meant a shift to the measurement of the simplest physical relations observable in nature and the extrusion of all attempts to explain occurrences in terms of forms, essences or qualities. These were themselves taken to be the effects, not the causes, of the movements of material particles; and the way was open for speculative materialism to project its mechanical explanation of phenomena into all realms of experience which were temporarily or structurally involved with physics. The two main lines taken by the materialist philosophy were expressed in the schools which followed the thought of Descartes in France and Bacon in England.

Descartes' rationalistic mechanism, despite his rejection of atomism and his predilection for mathematical abstraction instead of experiment, led him logically to a materialistic solution of the psychophysical problem. Although he called the universal cause and substance of all movement God, in his explanation of the motion of specific bodies he used only familiar dynamical principles, such as the conservation of momentum and mechanical laws of impact, conduction and the like. A dualist in his metaphysics, he was strictly monistic in his physics, introducing no distinction between organic and inorganic nature. Plant and animal behavior were assimilated to the behavior of machines. His followers in France continued this line of thought and, to the dismay of Descartes himself, sought to explain the human soul and its succession of ideas as modes of the body. In the eighteenth century Lamettrie, a physician who proclaimed the celebrated doctrine that man is a machine, explicitly avowed himself to be a Cartesian.

In England it was Francis Bacon who sounded the tocsin of revolt against metaphysical spiritualism. Although his own ideas of scientific method were narrow, crude and not altogether consistent, his attempt to substitute for the Platonic-Aristotelian conception of substantial forms the Democritean conception of form as "the law of the process by which things arise" provided a powerful stimulus to the revival of atomism as a basis for materialism. Hobbes systematized what Bacon had begun. In one of the most extreme and thoroughgoing systems of materialism the world has ever seen he stated the fundamental propositions that all change is motion and that geometry, mechanics, physics, ethics, politics, are sciences concerned with tracing the effects of motion in the domain of nature, mind and society. From these premises Hobbes argued consistently enough that all psychical phenomena from the secondary qualities to the highest reaches of the mind were "apparitions," lacking both substance and objectivity. He uses synonymously the terms ghost and incorporeal substance, The most celebrated use to which Hobbes put his materialism was to offer it as the foundation of political absolutism. The fundamental law of motion expresses itself in human behavior as the impulse to self-preservation. Pleasure arises when the impulse to self-preservation realizes itself in the exercise of power; pain, in the actual or anticipated frustration of this impulse. In a state of nature, other things being equal, the pain of suffering men's power over us far outweighs the pleasures of imposing our power over them. Reason, which is grounded in human nature, suggests instead of the reciprocal destruction involved in the war of all against all that there be formulated "convenient articles of peace, upon which men may be drawn to agreement. These articles, are they which otherwise are called the Laws of Nature.' Hobbes does not assert this agreement or contract to be a recorded historical fact; he contends that it is involved in the very existence of a stable community. The validity of such laws depends upon the existence of an absolute and indivisible sovereign power to enforce them. Absolute monarchy is the best form of sovereignty. The monarch as the repository of all existing law and the source of future law has the right to total obedience until he is overthrown.

The influence of Hobbes' materialism, reenforced by Locke's theory of experience, was to reappear in the philosophy of the French Enlightenment—especially in the writings of Lamettrie, Diderot and Holbach. Accepting from Hobbes the proposition that the world consists only of matter in motion and from Locke that all ideas and knowledge are derived from experience and reflection—which Condillac and Helvétius, Locke's disciples, reduced to sensation—the French materialist school now faced the central problem of explaining the way in which sensation or consciousness arose from the movements of matter. Diderot offered the bold solution that "sensation is a general property of matter, or a product of its organization." Differences in the degree of consciousness were correlated with differences in the complexity of material organization. Mind was a function of matter in the same way as light, heat and sound. Correlated with this view was the belief that mental

phenomena obeyed the same mechanical laws as matter. The difficulties of deriving the unity of consciousness from isolated elements of vague feeling in material bodies were no more adequately met than in the writings of the German materialists of the 1840's. The primary motivation of both the French and the German school of materialism was not the creation of a consistent theoretical system but the discovery of a starting point for political, religious and social reform. Nothing was more congenial to the social reformers and humanitarians than the proposition that man is completely the product of his environment and that the differences between virtue and vice, knowledge and ignorance, may be controlled by changing the environmental stimuli. At one stroke the doctrine of original sin and natural grace were ruled out in accounting for differences in political, social or biological status; the way was cleared for the infinite perfectibility of man through reasoned control of nature; and a fervent belief in the possibility of a science of human welfare, as objective as the principles of motion which were at its base, took possession of the foremost thinkers of the materialist school.

The intensification of the social question in the nineteenth century was largely responsible for the rise of a new type of materialism, the dialectical materialism of Karl Marx and Friedrich Engels. In a formal philosophic sense this doctrine is descended, at least on one side, from German idealism, which began with Kant and culminated in Hegel. Following Hegel's death a reaction toward naturalism set in among a group of his followers, who felt that the master's philosophy led too much in the direction of political conservatism and religious mysticism. These rebellious followers sought, however, to retain the emphasis on the dynamic character of experience and particularly on the active role of consciousness in social life, which had been largely neglected by naturalist and materialist philosophies. In the case of dialectical materialism even the dialectical method of Hegel was taken over, modified and set to function within a materialist context. A full exposition of its principles is given in the succeeding section of this article. Here it is sufficient to note that its development took place in the period from the 1840's to the 1890's within the circle of the Marxian socialist movement. It remained largely unknown to non-socialist thinkers, and even among professed Marxian socialists it was not always accepted. The success of the Communist revolution in Russia has, however, made it the official philosophy of the Soviet Union and has given it a new character as a contemporary force.

The nineteenth century witnessed an extension of the materialistic modes of thinking to psychology and biology but at the same time it revealed the inadequacies of the traditional materialism, which sought to reduce the laws of animal behavior and of human thinking to the simple successions of mechanics. The natural adaptation of animal species to their environment, which had hitherto seemed too complex and widespread to be attributed to happy accident, now received a plausible interpretation in terms of variation, selection through struggle for existence, and hereditary transmission. Evidence that new species arose through modifications of the old strengthened the hypothesis of the unitary origin of all life and furthered the tendency to treat man and his every activity as part of natural history. Investigation of the physiology of the sense organs and of the nervous system, although it resulted in a repudiation of the naïve mirror theory of sensation, brought to light the thousandfold dependence of psychic experience upon the organization of the body and occurrence of external stimuli. But as the gaps in human knowledge were progressively eliminated through discovery and experiment, it became clear that what was distinctive in the behavior of each type of structure could not be deduced from the behavior of the simpler types. The laws of biology presupposed those of physics, the laws of psychology those of biology; but each set of laws has to be treated as genuine emergents, otherwise the novelty and variety of the world would have to be read back into the mechanical configuration of the primordial slime. By the end of the century the very "solidity" which materialism had derived from its appeal to mechanics vanished in the electromagnetic interpretation of matter, according to which even mass is no longer a constant. From different directions today the quantum theory and the theory of relativity have contributed to undermining other assumptions of traditional materialism—such as the absoluteness of space and time and the universality of determinism and of the causal relation. The alleged idealistic implications of modern physics have induced a more sympathetic attitude toward experimental science on the part of religious orders in western Europe. In recognizing that it can do justice to only one aspect of experience, that the human mind enters constitutively into the formulation of funda-

mental concepts, that its method is approximative and applicable only to series of phenomena and not to individuals, science, so it is said, has lost its materialist sting.

This summary sketch of some of the more important historical forms of materialism is sufficient to indicate that a variety of attitudes and motives has entered into its systematic construction. Undoubtedly the most recurrent motive behind the theoretical formulation of materialism has been the desire to win new spheres for human control from the obstructive influence of animistic, spiritualistic and religious thought. As a consequence most materialistic philosophies have been opposition movements. From Democritus to Karl Marx they have leveled their arguments against dominant systems of spiritualistic thought in which emphasis on immaterial entities and final causes have interfered with the discovery and control of the specific mechanisms of things. The ultimate impact of materialistic doctrine therefore has always been social and cultural. These social and cultural objectives have varied all the way from the desire to provide a more stable base for government than that derivable from religious authority to the desire to extend the sphere of economic activity in independence of the sanctions of church and state.

DIALECTICAL MATERIALISM is the philosophy sketched out in the philosophical writings of Marx and Engels, part of which has been published only recently following the revival of this philosophy as the official doctrine of Soviet Russia. Its chief textual sources are: Marx and Engels, *Die heilige Familie* (written 1844); Marx, economic and philosophical manuscripts written in 1844 (first published in *Gesamtausgabe*, pt. i, vol. iii), *Thesen über Feuerbach* (written 1845); Marx and Engels, *Die deutsche Ideologie* (written 1845–46); Engels, *Herrn Eugen Dührings Umwälzung der Wissenschaft* (1878), and *Dialektik und Natur* (first published 1927). The philosophy is by no means a completely worked out system; also because of its close union with the practise and needs of the international working class, interpretations of controversial points and elaboration of fragmentary indications are subject to revision. One may, however, attempt to expound the doctrine by means of its leading principles, including those stated as such in the writings of Marx and Engels and those which in the judgment of the writer would seem to be implied.

(1) *The principle of realism.* The existence of any object does not depend upon its being perceived or experienced in any way. Although some characters of existence may depend upon the mode in which it is experienced, existence itself cannot be deduced from psychological or logical considerations alone. Time, space, causality and other fundamental categories can serve as organizing forms of consciousness only in so far as they express objective attributes of matter. Dialectical materialism consequently lines itself up with the great realistic tradition in western thought according to which will, knowledge and activity depend for their effectiveness upon certain structural features of the situation in which they function.

(2) *The principle of dialectic.* As the name indicates, dialectical materialism took over the dialectical interpretation of reality developed by Hegel. The term dialectic as originally used in Greece meant the process of getting at the truth through a debate carried on by opposing sides. For Hegel as for some of the other post-Kantian philosophers the movement of experience itself represents a sort of logical debate carried on by reality, with a logical thesis being opposed by the logical antithesis and yielding thereby an endless movement toward a higher synthesis. The ultimate goal of the Hegelian dialectical process is God, or the pure spirit freed from its self-alienation in matter, and it is this goal and its implications that are rejected by Marx and Engels at the moment that they retain dialectic as an interpretation of the process of reality. The extent of the debt of dialectical materialism to the Hegelian philosophy and its divergence from it may best be indicated in Marx' own words. In the preface to the second edition of *Das Kapital* he writes: "My dialectic method is not only different from the Hegelian, but is its direct opposite. To Hegel, the life-process of the human brain, i.e. the process of thinking, which, under the name of 'the Idea,' he even transforms into an independent subject, is the demiurgos of the real world, and the real world is only the external, phenomenal form of 'the Idea.' With me, on the contrary, the ideal is nothing else than the material world reflected by the human mind, and translated into forms of thought. The mystifying side of Hegelian dialectic I criticized nearly thirty years ago . . . [but] the mystification which dialectic suffers in Hegel's hands by no means prevents him from being the first to present its general form of working in a comprehensive and conscious manner. With him it is standing on its head. It must be turned right side up again, if

you would discover the rational kernel within the mystical shell."

(3) *The principle of determinism.* Although there are chance elements in the world, the methodological assumption of science presupposes that all objects of inquiry in different fields are subject to law. There can be no dispute about this, and where there is dispute the real problem is whether some subject matter can be treated scientifically. Dialectical materialism holds that no limits can be drawn to the progress of science and although many things will probably remain unknown none of them is inherently unknowable. Engels in his *Feuerbach* makes short shrift of Kant's *Ding an Sich*, which like Spencer's Unknowable conditions experience but is never known. He repeats Hegel's argument that the nature of a thing is not some mysterious x but the sum total of all its qualities or the synoptic formula which unifies its appearances from all possible points of view.

(4) *The principle of emergence.* Mechanism is the simplest but not the sole expression of determinism. This is clear from the very phenomena of growth and development, with which dialectical development is so vitally concerned. Growth and development involve diversification; mechanical law merely asserts, however, that like causes give like effects. Another principle must therefore be introduced to account for the palpable facts of variation and evolution. This is the principle of emergent qualities. It states that differences in quantity ultimately give rise to differences in quality and that the relations between the qualities cannot be reduced to or deduced from the quantitative relations which define the initial series. In the course of time and on one level after another there arise new groups of qualities and patterns of behavior. Types of laws are discovered which hold for limited domains and which in turn condition but do not determine the development of other laws. Thus the laws of physics hold for all things inanimate or living; but the laws of biology, although they rest upon the laws of physics, are distinct and cannot be deduced from them. Similarly the laws of biology hold for all living things human or non-human, but the laws of human psychology, although they rest upon the laws of biology, cannot be deduced from them. The recognition that the laws of mechanics, biology and other sciences contain unique qualitative elements whose analysis demands special explanatory categories is the great differentiating mark between "vulgar" and dialectical materialism. On this issue dialectical materialism parallels the positions taken by the philosophies of emergent evolution and emergent naturalism in England and the United States.

In Russia today this emphasis upon the specific and qualitatively unique aspect of each situation has produced a rift in the school of the dialectical materialists. Those who seek to explain situations under the broad formal laws of physical or social behavior (depending on the realm in which the phenomena fall) are accused of being monistic mechanists. It is said that in their attempts to operate with general principles they overlook the Hegelian insight that principles are modified in every particular application. They are also charged with disregarding Engels' dictum that independently of the specific expressions in which it is always found matter as such is a pure mental construction or abstraction. On the other hand, those who are called mechanists dub their opponents idealists and claim that besides multiplying entities without necessity they are themselves guilty of trying to destroy individuality by reducing it to a complex of relations. They contend that the opposing faction of the dialectical materialists has fallen victim to a too sympathetic study of the Hegelian logic, which is reflected in their tendency to regard matter in its different forms as a precipitate out of types of logical relations of varying complexity.

(5) *The principle of temporalism.* Marx was peculiarly sensitive to the omnipresent facts of change. And since for him time was the objective measure of change, his philosophy of dialectical materialism has been regarded, not without justice, as a variety of critical historicism or temporalism. Not only are the objects of judgment continually taking on new characters and qualities, but ideas and judgments themselves possess implied time coefficients. Indeed Marx goes so far as to assert in his *La misère de la philosophie* that "ideas and categories are not more eternal than the relations which they express. They are historical and transitory products." It is important to remember, however, that the reference here is to social relations, which change more rapidly than physical and less rapidly than psychological relations. For to maintain that everything changes at the same rate would be equivalent logically to saying that everything is at rest. Consequently the principle of temporalism reenforces the principle of emergence by distinguishing between the different kinds of historically enduring entities.

(6) *The principle of interaction.* The activistic

impact of Marx' thought led him to two problems which had baffled all previous philosophers of materialism. The first was to account for the effective character of individual consciousness, which had been treated by early materialists as a mere chemical product of the body; the second was to explain the transformative character of class consciousness, which is so integral a part of any social philosophy that proclaims the virtues of revolutionary mass action. The crucial importance of these problems comes to light in the terrific struggle which Lenin waged against the doctrine of "spontaneity" from 1902 (in *Chto delat?* tr. as *What Is to Be Done?* in vol. iv of his *Collected Works*, 1927) down to 1922, a struggle which caused him to be termed a heretic and idealist by the more orthodox sections of the German Social Democratic party. Marx meets the first problem in his dialectical theory of perception. In his first and fourth glosses on Feuerbach he stresses the fact that sense perception is not a form of knowledge but a practical sensory activity by which the organism adjusts itself to external stimuli. Out of the interactive process of adjustment knowledge is born. Knowing is not a passive reflection or image of some fully formed antecedent existence but a method of acting upon that existence. Its import consequently is practical, not in the narrow sense of utility but in the sense that it involves a method of handling material instead of merely contemplating it. The second problem finds its solution in Marx' conception of class consciousness as the carrier of historical forces. Class activity is the mode by which the socially determined comes to pass. But only that activity can be effective which on the basis of social needs projects ideals and exercises itself on their behalf. In this activity the victorious class leads events; it does not slavishly wait and follow them. "The materialistic doctrine that men are the products of conditions and education . . . ," Marx reminds Feuerbach, "forgets that circumstances may be altered by men and the educator has himself to be educated."

(7) *The principle of biological materialism.* Marx was one of the earliest disciples of Charles Darwin. But he vigorously contested the attempts made by the Social Democrats to bring over into sociology the concepts of the struggle for existence and the survival of the fittest. Such attempts were, in his eyes, nothing else than Calvinism in modern dress. None the less, in letters to Engels, Lassalle and Kugelmann he hailed Darwin's work as providing the naturalistic foundations of the philosophy of dialectical materialism. This meant that all human attributes were to be taken as continuous with biological tendencies already present in lower forms; that thinking especially was to be regarded as a natural event; that all forms of dualism were to be shown to be distortions of the results of the evolutionary process; that fixed natural forms and external teleology were to be finally banished from science; and that all cultural life, although quite distinct from organic biological tendencies, necessarily presupposes the existence of these biological tendencies as a necessary condition. Together with Engels he suggests that there is no purely biological behavior—that certain changes in man, as, for example, changes in stature, may be culturally conditioned. He accepts Hegel's position in the *Phänomenologie* that even sense perception, not merely the contents of perception but the way of perceiving and the meanings disclosed in the act of perceiving, is as much a cultural as a psychological phenomenon.

(8) *The principle of historical materialism.* Dialectical materialism applied to the realm of culture, that is, to the field delimited by the common activity of men as *members of society*, gives us the principle of historical materialism. This is the hypothesis that, in the words of Engels, "the causes of all social changes and political revolutions are to be sought, not in men's brains, not in Man's better insight into eternal truth and justice but in changes in the modes of production and exchange. They are to be sought not in the philosophy but in the economics of each particular epoch."

(9) *Social interpretation of categories.* A further extension of the principle of historical materialism is involved in the attempt, already begun by Marx and Engels, to offer a social interpretation of common sense categories. The starting point of this type of investigation is the belief that occupational activities determine the fundamental modes of social behavior and that in this behavior are formed ideas, attitudes and habits which express themselves in other fields of culture. There arises a whole schedule of desires, values and criteria of satisfaction and validity which dominate the interpretation of social and natural experience. Philosophies of life sum up in technical and poetic idiom the appearance of the world from the varying perspective of different economies.

(10) *The principle of practise* (*Praxis*). Of all the principles of the philosophy of dialectical

materialism the most fundamental is the indissoluble unity of theory and practise. From this principle practically all the other principles of Marx' method may be derived. For Marx theory arises as a general method of meeting the specific problems of man, nature and history. The existence of the world as a whole is not an intelligible problem, just as the question "Why does anything exist and not nothing?" (Schelling) is not an intelligent question. A theory has meaning only in so far as it gives us a leverage in something concrete which bears upon the solution of a problem. The series of such concrete effects is all that can be discussed when the validity of a theory is in question. A theory is true in so far as it enables us to settle the concrete difficulties out of which these problems have arisen. A theory which does not ultimately indicate something to be done, which does not make a difference to a situation which it calls forth, is a form of verbal behavior which at best can have only aesthetic value. Failure to realize that practise is the life of theory and theory the guide to practise is responsible for all the futile questions about the possibility of knowledge which have vexed mankind, and at different times has resulted in mechanism, resignation, barren formalism, skepticism and other attitudes hostile to intelligent control of the physical and social environment. In his second gloss against Feuerbach Marx trenchantly observes: "The question whether human thought can arrive at objective truth is not a question of theory but a practical question (*Praxis*). In practice, man must prove the truth, i.e., the reality, power and this-sidedness of thought. The dispute as to the reality or unreality of thought which is separated from practice is a purely scholastic question." From this it follows that Marx' own ideas must be tested in action and that, more specifically, his theory of history is a method of making history, his economic analysis is a guide to economic action, his reflections on human behavior are clues to controlling behavior. Only after such experimental activity has been performed are we even in a position to say that his ideas were valid because they conformed to the structure of the antecedent situation. For what does it mean to say that an idea conforms to a situation? Taken literally no idea could ever change a situation if it merely conformed to it or duplicated it. An idea conforms to a situation when as a result of acting on it we produce changes in the situation which fulfil the needs out of which the problem arose. For quite literally human needs are part of the total situation. The denial of activity as the test of truth involves the abandonment of dialectical materialism. The acceptance of the critical nature of informed activity in all thinking makes dialectical materialism self-critical, for it offers it a way of developing itself in the face of new conditions. Engels was fond of saying, whenever the validity of historical materialism was discussed, that "the proof of the pudding is in the eating"; and he would often quote Faust's *Im Anfang war die That* as the beginning of philosophical wisdom. It would be no exaggeration to maintain that the future of dialectical materialism depends on how seriously his words are taken.

Historical Materialism is the doctrine, given authoritative expression by Karl Marx and Friedrich Engels, that "the mode of production determines the character of the social, political, and intellectual life generally." Although practically all of the work of Marx and Engels dealing with economics and culture may be regarded as a working out of this theory, the writings that are of special importance for an understanding of historical materialism are the following: Marx, *Zur Kritik der Hegel'schen Rechts-Philosophie* (1844), and economic and philosophic manuscripts written in 1844 (first published in *Gesamtausgabe*, pt. i, vol. iii); Marx and Engels, *Die heilige Familie* (written 1844), and *Die deutsche Ideologie* (written 1845–46); Marx, *La misère de la philosophie* (1847), and *Zur Kritik der politischen Ökonomie* (1859); and Engels, *Vier Briefe über den historischen Materialismus* (1890, 1893–94).

As its name suggests, historical materialism differs from all other materialistic interpretations of history in refusing to explain the rise and fall of social systems as an effect of factors which are non-social. Admitting that climate, topography, soil, race, are genuine conditioning factors of social and historical activity it denies that they determine the general character of a culture or its development. The reason is twofold: first, in any given area these factors are relatively constant while social life is more variable; second, there can be no intelligible reduction of the specific qualities of human behavior—exhibited in a social context—to categories of physics and biology. The attempts recently made, especially by Ellsworth Huntington, to recast the geographical interpretation of history suggested by Herder and Montesquieu and more explicitly stated by Buckle in order to show that changes in civilization can be correlated with climatic pulsations and the shifting of climatic zones do not

escape the difficulties which Hegel had already pointed out. Not the slightest evidence has been produced, for example, to show that the climate of Greece from the sixth century B.C. to the first —a period of tremendous social change—varied in any appreciable way.

Historical materialism differs from all other theories which attempt to do justice to the relative autonomy of social phenomena by virtue of the scientific character which it claims for itself; i.e. by its quest for controlling or determining mechanisms. While other theories which seek to discover controlling conditions fail to do justice to the historical character of culture, those theories which have a strong sense for the historical factor, notably idealistic social philosophies of the Christian and Hegelian varieties, fail to indicate the specific mechanisms of social change. Historical materialism rules out idealistic social interpretations by showing that the acceptance and often the genesis of ideas depend upon something which is not an idea, and that ideas themselves when they function as instrumental agencies in a social environment are indirect and sublimated expressions of class interests.

The positive principles underlying the theory of historical materialism may be summed up as follows: (1) Every existing culture is a structurally interrelated whole. Consequently any aspect of that whole—its legal code, educational practises, religion, art or the like—cannot be understood by itself. It must be taken within the context of the system of social energies in which it functions. An analysis of law or a history of law demands more than a mere treatment of legal ideas and their formal interrelation. It was the realization of the organic character of culture and its morphologically determined structure which suggested to Marx his real problem: what factor determines the general style or form of a historical culture? Marx himself in sketching his own intellectual history tells us that as early as 1844 in the course of a revision of Hegel's philosophy of law he had come to the conclusion "that legal relations as well as the forms of the state could neither be understood by themselves nor explained by the so-called general progress of the human mind" (*Introduction to Critique of Political Economy*).

(2) Culture is not only an interrelated whole but a developing whole. The independent variable in the developing social whole will be the explanatory key not only to the causes of change from one society to another but to the dominant culture pattern existing at any time. According to historical materialism the independent variable is the mode of economic production. This differentiates historical materialism from non-mechanistic social idealism from Hegel down to the present. Hegel had maintained that "political history, forms of government, art, religion, and philosophy—one and all have the same common root, *the spirit of the time*." Marx, on the other hand, contended that all of these cultural phenomena are "rooted in the material conditions of life, which are summed up by Hegel after the fashion of the English and French of the 18th century under the name 'civic society'; the anatomy of that civic society is to be sought in political economy."

The view that the independent variable is the mode of economic production does not deny that the cultural products of economic development react upon that development. Engels' continued insistence upon the category of *Wechselwirkung* was occasioned by charges that historical materialism suffered from a primitive monism according to which all efficient causes in history were material, never ideal. In his letter to Starkenberg (January 25, 1894) Engels writes: "The political, legal, philosophical, literary, and artistic development rest on the economic. But they all react upon one another and upon the economic base. It is not the case that the economic situation is the *sole active cause* and everything else is merely a passive effect. Rather is there a reciprocity within a field of economic necessity which *in the last instance* always asserts itself" ("Wechselwirkung auf Grundlage der in letzter Instanz stets sich durchsetzenden ökonomischen Notwendigkeit").

Similarly, historical materialism does not deny the role played by social tradition in modifying the rate of change in the non-material aspects of culture. "The tradition of all dead generations," Marx writes in the *18th Brumaire*, "weighs like a nightmare on the brain of the living." Family relationships, religion, art and philosophy, although they reflect the new social equilibrium produced by changes in the economic order, lag behind both in time and structural form. From the vantage point of a long time perspective the phenomena of cultural lag may not appear significant, but from the point of view of short scale political operation they are of great importance.

(3) By the economic structure of society historical materialists mean "the sum total of the relations of production." The relations of pro-

duction (involving the material powers of production, of which natural raw materials, inventions, existing skills, techniques and knowledge are a part) constitute the real foundation of the whole cultural complex. Historical materialism must therefore be differentiated from the technological interpretation of history, or economic determinism. By the "relations of production" Marx means not the mechanical agencies used in manufacture or the technical organization of the factory but the social relations into which human beings enter or, better still, find themselves whenever they participate in the economic life of society. Property relations are the formal expressions or signs of these social relations of production. These in turn constitute a whole of which technique is only one of the parts. "Machinery," Marx argues, "is no more an economic category than is the ox which draws the plow. Machinery is only a productive force." Indeed it is possible to find societies with different social relations but certain identical productive forces: techniques of tilling the soil were sometimes the same in feudal economies as in slave economies; the use of machinery in the Soviet Union parallels that in the United States. More important still is the assertion of the historical materialist that the very development of technique is not independent but is guided by the needs of a larger social productive whole, of which it is a part. The direction taken today by technical invention, for example, as well as the question whether the invention is to be utilized or scrapped is normally decided not by the spirit of the inventor or the rationale of his creation but by the likelihood of its directly or indirectly diminishing production costs or increasing profits.

(4) The mode of economic production is expressed in certain social relationships which are independent of any individual. Man is born into a society in which property relations have already taken form. These property relations define the different social classes, such as feudal lord and serf, employer and employee. The conflicting interests of these classes flow not merely from the consciousness or lack of it of individual antagonisms but from the different objective roles played by them in the processes of production. The absence of class conflicts, which may often be the consequence of the activity of professional social pacifiers, no more eliminates the real opposition of class interests than the willingness of Negro slaves to serve their masters proves that they were not enslaved.

It is the emphasis on social relations and class interests that differentiates historical materialism from those doctrines which seek to explain social processes in terms of individual economic self-interest. Marx attacks Stirner in the *Deutsche Ideologie* and Bentham in *Das Kapital* precisely because they conceived man on the pattern of an egoistic and self-centered petty bourgeois shopkeeper who keeps a profit and loss account of his feelings and whose every act is determined by calculation of exclusive, personal gain. The motives which guide individual men are quite various. A member of the working class who voluntarily enlists to fight for his country cannot by the wildest stretch of the imagination be regarded as necessarily actuated by self-interest. The historical materialist is not concerned with individual motives as such. His problem is to explain why certain social ideals prevail at one period rather than at another and to discover what factors determine the succession of ideals for which men live and die. That economic conditions and economic self-interest are two distinct things may be simply demonstrated by showing that the very existence and intensity of egoism as well as the rise of philosophies of self-interest are functions of specific economic conditions.

(5) The division of society into classes gives rise to different ideologies—political, ethical, religious and philosophical—which express existing class relationships and tend either to consolidate or to undermine the power and authority of the dominant class. A struggle for survival goes on in the realm of ideas. Since those who control the means of production also control directly or indirectly the means of publication—the church, press, school—the prevailing ideology is a buttress to the existing order. "In every epoch," writes Marx, "the ruling ideas have been the ideas of the ruling class."

(6) In every social order there is a continuous change in the material forces of production. Sometimes, as in early societies, this change is produced by some natural phenomenon, such as the desiccation of rivers or exhaustion of the soil. Usually, however, and especially under capitalism this change is produced by a development in the instruments of production. At a certain point in their development the changed relations in the forces of production come into conflict with existing property relations. It no longer becomes possible on the basis of the existing methods of distribution of income to permit the productive processes to function to full capacity. Property relations are now recognized

as a fetter upon further social development. The class that stands to gain by the modification of property relations becomes revolutionary. It asserts itself as a political force and develops a revolutionary ideology to aid it in its struggle for state power. Sometimes it masks its class interests in the guise of slogans of universal appeal, as did the French bourgeoisie in the eighteenth century; but at all times its doctrines are patterns of social action and function instrumentally in preserving or overthrowing the status quo. One of the most important tasks of historical materialism is the criticism of cultural and social doctrines in order to discover their social roots and presuppositions, their avowed class values and allegiances and the social direction taken by practical activity in their behalf.

(7) Viewed in the light of contemporary processes all history since the disappearance of primitive communism may be regarded as a history of class struggles. Every class struggle is a political struggle; for the state is an organ of class repression and is never really neutral in class conflict. Every ideal struggle in so far as it bears upon the class struggle has political repercussions and may be evaluated from a political point of view without prejudice to its own specific categories.

(8) The struggle between capitalist and proletariat represents the last historic form of social opposition, for in that struggle it is no longer a question of which class should enjoy ownership of the instruments of production but of the very existence of private ownership. The abolition of private property in the means of production means the abolition of all classes. This can be accomplished only by a victory of the proletariat. Political power is to be consolidated in a transitional period of revolutionary dictatorship, after which the state dies out; i.e. its repressive functions disappear and its administrative functions become part and parcel of the productive process.

Several important problems still await solution at the hands of historical materialists. Chief among them are: (1) What are the specific mechanisms by which economic conditions influence the habits and motives of classes, granted that individuals are actuated by motives that are not always a function of the individual self-interest? Since classes are composed of individuals, how are class interests furthered by the non-economic motives of individuals? The attempt of Dietzgen to solve this problem must be regarded as a failure. Marx makes some suggestions which point in the direction of an objective socio-behavioristic psychology. (2) The statement that economic conditions "in the last instance" determine social life or that they are "the real foundations" of society implies a theory of measurement. So far, however, no theory of measurement for the social disciplines has been evolved. That their explanatory categories and units of measurements must be different from those of the physical sciences seems clear. But this alone is not sufficient. (3) If it is true as Marx states in *Das Kapital* that in changing his external environment man changes his own nature, then human nature under ancient slavery must have been different in some respects from human nature under modern capitalism. But if this is so, how is it possible to understand past historical experience in the same way as we understand present experience, since understanding presupposes an invariant explanatory pattern? That is a problem which confronts not only historical materialism but all philosophies of history; this is, however, no valid reason for avoiding it. (4) To what extent are chance events to be admitted as operating forces in history? Most historical materialists have contended, like Pokrovsky, that "to appeal to chance in history is to exhibit a certificate of poverty." Both Marx and Engels were more cautious. In a letter to Kugelmann on the Paris Commune (April 17, 1871) Marx goes so far as to claim that for some specific and local issues chance may be a decisive factor. Engels with his eye on long range tendencies admits the presence of chance phenomena but holds that their influence is compensatory, with the result that in the final account they cancel one another. The difficulty with the question of chance seems to be that a great many critics as well as disciples of Marx define chance events as absolutely uncaused events instead of events that are historically irrelevant. From the point of view of the historian only those are chance events which he cannot draw within the circle of his social explanation, although each of those events may be strictly determined from other points of view. If one denies the existence of even relative chance in history, then historical materialism becomes a variant of either one of two doctrines: a degenerate Hegelian idealism whose organic determinism implies that if anything had been different, everything would have been different; or a fatalistic mechanism which holds that there is no genuine novelty in the world and that future social changes are already predetermined by the atomic configurations of the primordial slime.

(5) Is the truth of historical materialism itself historically conditioned or is it valid for all history, past and present? Both Marx and Engels declared that its truth was relative only for class societies and that consciousness of the conditions of its truth would lead to action which would abolish class society. Does this mean that "the leap from the kingdom of necessity to that of freedom," the phrase with which Engels describes communism in *Anti-Dühring*, implies a paradise in which man escapes the limitations of his earthly fate? There is no warrant for the belief that historical materialism justifies any such historical apocalypse. The freedom of which Engels speaks is the freedom of man to make his own social history on the basis of the natural necessities always present. That he will be in a position to make history at all will find its explanation in some form of materialism; but the kind of history he will choose to make out of the many possibilities which are given will be irreducibly and uniquely an expression of his own nature.

SIDNEY HOOK

See: PHILOSOPHY; LOGIC; NATURALISM; REALISM; ETHICS; SOCIALISM; IDEALISM; MECHANISM AND VITALISM; ORGANISM, SOCIAL.

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MATERIALISTIC INTERPRETATION OF HISTORY. *See* MATERIALISM.

MATERNITY WELFARE. Public interest in maternity welfare as expressed in directed efforts to reduce the number of deaths in childbirth and to preserve the health of mothers is a development of relatively modern civilization. Among primitive peoples death has been for the most part regarded with fatalism; and the tabus and special provisions associated with pregnancy, such as abstinence from particular activities, prohibition of certain foods and temporary isolation before or after childbirth, have been concerned with supposed evil effects on the child or on the community and only incidentally with the health of the mother. Greek and Roman literature afford evidence that in classic times midwives commonly attended women during confinement and that physicians were summoned in abnormal cases. During the Middle Ages the care of parturient women was negligible because of the decline of midwifery and obstetrics, the low state of any form of provision for general public health and the fact that the early Christians were interested more in the welfare of the child than in that of the mother. The earliest recorded instances of organized efforts at maternity welfare work date from the thirteenth century: in Rome Jewish societies for the relief of the poor in the ghetto provided assistance for maternity cases, and in the German town of Pfullendorf free hospital confinement was offered to women without means. Public midwives were employed by the cities of Nuremberg and Frankfort in the fourteenth and fifteenth centuries and soon thereafter by other European cities. In the eighteenth century Denmark provided for state training and licensing of midwives, while in Paris and in Turin private charities assisted poor mothers.

With the industrial revolution and its effects upon the working and living conditions of the masses the problem of maternity welfare became intensified, and emphasis shifted from the personal to the collective. The increasingly widespread employment of women and the absence of legislation restricting hours of employment, types of work or sanitary conditions exacted a costly toll in the form of mounting death and morbidity rates for both mothers and children. Widespread interest in all phases of maternity welfare—medical, economic and social—was not aroused, however, until the second half of the nineteenth century with the general awakening of social consciousness, the beginnings of factory legislation and to some extent the simultaneous rise of the woman's movement, especially in continental Europe, where it emphasized the problems of proletarian and unmarried mothers.

Equally significant in reducing the hazards of childbirth was the progress in the nineteenth century in the field of preventive medicine and of public health work. In the 1840's the Hungarian Ignaz Semmelweiss made the important discovery (coincidently with the American Oliver Wendell Holmes) that the highly contagious puerperal septicaemia (childbed fever) could be prevented by adequate sanitation; and the adoption of such measures in the Vienna General Hospital resulted in a drop in the maternal mortality rate due to this cause from 9.9 to 3.8 within one year and to 1.3 in the following year. The significance of improved sanitation is evidenced by the fact that even today puerperal septicaemia accounts for from 40 to 75 percent of all deaths in childbirth. For the United States the figure for deaths from septicaemia is 40 percent of the total; the toxaemias of pregnancy (albuminuria and convulsions) cause an additional 25 percent and of the remaining 35 percent the largest proportion is traceable to the so-called accidents of pregnancy.

Up to the period of the World War there was a steady decrease in the maternal mortality rate in most countries, but in the post-war period economic impoverishment and loss of physical vitality have in many countries resulted in an increase in the death rate, as is shown in Table 1. On the other hand, actual state provision for organized maternity protection is a post-war development in most countries. In general the scope of such protection has lagged behind that for children despite the obviously adverse effects of maternal mortality and morbidity on child welfare.

The following table is based on statistics of countries with comparable methods of estimating maternal mortality. No comparison of international mortality rates can be altogether free from error, although ostensibly the international rules for allocating various causes of death may have been followed in every country listed. To a certain extent the increase in some countries, as in the United States, can be attributed in part to an extension of the registration area, to inclusion of cases excluded by other countries and also to greater accuracy in the records.

This table does not include statistics for France, Germany and Russia. An earlier study

TABLE I

MATERNAL MORTALITY: DEATHS FROM CAUSES ASSOCIATED WITH PREGNANCY AND CHILDBIRTH PER 10,000 LIVE BIRTHS

COUNTRY	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Australia	43	53	56	47	47	50	47	55	51	55	56	53	59	60	
Belgium					72	60	57	53	56	58	50	61	57		
Canada							51	55	54	60	56	57	56	56*	
Chile	66	73	72	82	88	75	79	80	74	61	61	58	58	59	
Denmark						24	20	20	26	23	24	26	31		
Finland		36	38	44	40	36	33	30	31	35	29	32	30*		
Hungary		42	40	52	29	32	29	30	28	31	29	32	30	34	
Irish Free State	53	57	49	48	47	49	50	57	48	48	47	49	45	49	
Italy	22	27	30	37	29	28	26	25	27	32	28	26	26	28	
Japan	36	35	35	38	33	35	36	33	34	31	30	27	28	28	
Netherlands				29	33	24	23	25	23	24	26	29	29	34	33
New Zealand	47	59	60	52*	51	65	51	51	51	56	47	42	49	49	48
Norway	27	28	30	30	34	26	22	25	28	29	27	32	25		
Sweden	29	27	25	26	32	27	27	25	23	24	26	29			
Switzerland		54	56	51	57	56	55	51	46	48	43	44	37	44	46
United Kingdom															
England and Wales	42	41	39	38	44	43	39	38	38	39	41	41	41	44	43
Northern Ireland	56	59	51	47	46	69	52	47	49	45	44	56	48	52	
Scotland	61	57	59	70	62	62	64	66	64	58	62	64	64	70	69
United States															
Expanding Birth Registration Area†	61	62	66	97	74	80	68	66	67	66	65	66	65	69	70
Birth Registration Area of 1915	61	62	63	89	68	76	65	62	64	62	62	62	63	61	
Uruguay	22	29	32	30	23	34	33	27	27	25	25	30*	22*	24	

* Provisional.
† This area, which in 1915 included 10 states, included 46 in 1929.
Source: White House Conference on Child Health and Protection, *Obstetric Education*, Section I, Committee B, Subcommittee on Obstetric Teaching and Education, Report (New York 1932) p. 197. Figures for United States 1915 registration area compiled from annual mortality statistics of the United States Bureau of the Census.

by the United States Children's Bureau gives the mortality rate per 10,000 live births for France as 53 (1905–09), 49 (1910–14) and 66 (1915–16); for Germany as 34 (1901–04), 33 (1905–09), 35 (1910–14) and 46 (1915–19). Official German statistics based on all births disclose the following trend from 1920 to 1930 as: 48, 48, 49, 50, 51, 48, 48, 51, 53.5, 53.6 and 52, showing the steady increase in the death rate.

Since puerperal septicaemia causes so large a percentage of deaths and is most amenable to control, the figures for its incidence are of special interest. The most complete set of statistics available are those for England and Wales, which show a steady decline from a rate of 30 in 1882 to 13 in 1923, with, however, a slight rise since that time, until in 1925–27 it reaches the figure of 16 per 10,000 live births. Germany's rate, which in 1900 was 14, the lowest on record except that of the Netherlands with 8 and Italy with 9, doubled in the post-war period and began to decline only in 1928. In Sweden and Denmark the rate fell from 14.3 and 17 respectively at the beginning of the century to 9 in 1924, rising only slightly thereafter. The highest rate is that of Belgium with 30 in 1926, the lowest that of its immediate neighbor, the Netherlands.

These figures only rarely show the number of deaths due to miscarriages and abortions. Deaths due to criminal abortion are of course unrecorded. Nor is there any way of tracing later deaths due to these causes. Finally, there is no record of maternal morbidity. It has been estimated, however, for England and Wales that for every woman who dies in childbirth twenty suffer injuries to their health.

Various explanations are offered to account for the marked differences between countries in maternal mortality rates. Such factors as race, adaptation to environment, differences in physique, distribution, degree of urbanization, occupation, food habits and modes of living are of course significant. No less important are age distribution, prevailing marriage age, the number of first births and, since fatalities are high in the group below 20 years of age and over 40, the age at which births occur. From the point of view of social control it is relevant to inquire into the prevalence of syphilitic infection and the proportion of illegitimate births, in which the incidence of first births and of syphilitic

infection is likely to be high and in which the maternal death rate is often twice as high as that among married mothers. According to Sir Arthur Newsholme the great variations are to be accounted for chiefly by the differences in care, which he calls the "management of parturient women." This involves first adequate medical supervision before confinement, at delivery and after birth. Such supervision requires increased attention in medical education to the practise of obstetrics, the provision of trained and licensed midwife nurses and obstetrical service for both rural and urban areas, maternity and infant centers offering advice and treatment to expectant and nursing mothers, maternity hospitals or maternity wards in general hospitals for abnormal cases and the availability of all these services for the family with limited means. Directly related to such a program is the control of venereal infection; this would include the enactment of marriage laws, such as that of the state of Wisconsin, making physical examinations and certification of freedom from disease compulsory before marriage. The spread of knowledge concerning the use of contraceptives is also important. Finally, the state not only should supply the elementary needs but should provide also health insurance specifically covering maternity benefits; moreover its labor code should regulate hours, types of employment and leaves of absence for working mothers.

It is interesting to note the prevalence of high insurance rates for married women in most countries. In Germany in the pre-war period insurance companies offering sick benefit schemes were unwilling to accept women members because of their higher sickness rate. In France mutual aid societies have frequently specified that confinement could not be regarded as a sickness and did not entitle women members to benefits. To overcome this objection it has become customary for the state, either federal or provincial, to grant special subsidies which pay sickness benefits in confinement cases.

A survey of the European countries in which mortality rates are very low—the Scandinavian countries, Holland and Italy—shows that these states have the fullest and most coordinated provisions for all types of assistance. In the Scandinavian countries, which are predominantly rural, where the general food habits are good and public sanitation and personal cleanliness are on a high level, the physique of the women is excellent and pelvic disorders are rare. On the other hand, in these as in other continental countries the rate of illegitimacy is very high. In Holland, although the density per square mile and the urbanization are almost as great as in England and Wales, where a far higher maternal mortality rate prevails, town planning and reconstruction constitute an integral part of municipal programs, as they do in the Scandinavian countries. Students of the situation in these countries, which have served as models for maternity welfare programs elsewhere, attribute the lower death rate not only to these causes but also to the fact that midwives, who attend over half of the deliveries, are subject to licensing and receive a training of from one to three years in state schools. They are paid in whole or in part out of the public budget, which provides a midwife for each community, and their services are free to all who cannot afford to pay. They receive benefits in case of sickness, are required to retire at a certain age and are forbidden to handle abnormal or unusual cases, which are immediately referred to hospitals. Moreover midwife service may be supplemented by that of district medical officers. Equally careful provisions are made for special obstetrical education of the physician.

Laws for the protection of women in industrial employment require sick leaves varying from four weeks after childbirth in Denmark to twelve weeks with full pay in Holland; special maternity benefits are provided by the state or, under the schemes of contributory health insurance, hospitalization and extended benefits. Everywhere the system is well coordinated, although arrangements for prenatal care vary, being perhaps most advanced in Holland.

Italy has recently established compulsory maternity insurance and provided midwives for urban health centers, health visitors in rural districts, traveling health centers and demonstration clinics; courses in prenatal and postnatal care for physicians, midwives and the laity, in which private contributions supplement public provision, have also been initiated.

The earliest German legislation concerned with maternity protection was enacted in 1878, when three months' leave after confinement was made compulsory in certain industries. The sickness insurance act of 1883 provided for the payment of maternity benefits at the same rate as those for ordinary illness. Since then an extensive system of legislative protection for maternity has been developed, including mothers' pensions, maternity insurance and sick leave during confinement. An act of 1927 stipulates

that all women wage earners in industry are entitled to at least twelve weeks' sick leave during pregnancy with guaranty of maintenance in employment, and regular nursing periods upon their return to work; under the Federal Insurance Act of 1929 women in agriculture and domestic service were also included. All employed women whose wages did not exceed 3500 marks were thus covered. Medical attention and sickness benefits are provided before and after confinement. Indigent women who are not entitled to insurance benefits are cared for by public relief. In view of this legislation the increasing mortality rate of Germany is most surprising; it can be explained in part by widespread unemployment and laxity in the administration of legislation. In Berlin the rate for 1926 was as high as 64 per 10,000 births; illegitimacy reached 19 percent, while abortion accounted for 75 percent of the deaths. Moreover there was inadequate midwife training and public services were not well coordinated. Although midwives attend 90 percent of the births in Prussia they have been underpaid and there has been no provision for adequate training or public employment.

In France maternity benefits are paid to women without means, whether or not they are regularly employed, for at least twelve weeks after childbirth. The funds are supplied jointly by the state, departments and communes. If the mother nurses her child she receives a nursing benefit for a period not exceeding one year. In addition medical attendance and drugs are supplied during pregnancy and for six months after confinement. The cost of this service is shared by the state and the individual under the system of social insurance.

Probably the most comprehensive welfare scheme in any country is that outlined by the Institute for the Protection of Motherhood and Childhood in Soviet Russia, which in 1927 expended 108,000,000 rubles for various forms of maternity service. Among the important aspects of its program are a widespread system of factory crèches for the care of the infants and children of working mothers, adequate daily nursing periods during hours of employment for all women with infants, the establishment of hostels where women may be cared for two months preceding and two months following childbirth, medical consultation centers for pregnant women and those with babies and the foundation of lying-in hospitals. The total number of institutes designed to protect motherhood rose from 27 in 1917 to 2539 in 1927. One unusual feature of the Soviet program is the provision of judicial consulting centers where women, whether married or single, may learn from qualified legal advisers how best to safeguard their rights. Because of the encouragement of birth control and the abolition of the status of illegitimacy the number of deaths from miscarriages and abortion has been greatly reduced during recent years. Over and above these services is the elaborate scheme of social insurance, which in 1927 paid 69,000,000 rubles to pregnant women in maternity benefits. The death rate per 10,000 births (including stillbirths) in Leningrad fell from 52 in 1923 to 35 in 1927.

Although England's maternity death rate is high it is far lower than that of other highly industrialized countries, such as Belgium, Scotland, Germany and the United States. In general, while recourse to midwives has increased on the continent, it has decreased in England. The Midwives Act of 1902 laid the foundation for safer and more effective practise by qualified midwives. Following the publication of letters from working class mothers a national program for the protection of maternity has been developed in the Ministry of Health. The Notification of Births Act in 1907 and its extension in 1915 made the registration of all births compulsory and brought a health visitor into the home to advise the mother in regard to her condition and that of her infant. In 1911 under the National Insurance Act a cash maternity benefit was introduced, as was the payment of sick funds during pregnancy and after confinement. Since 1918 there has been a nation wide supervision of pregnant women through the setting up of maternity and welfare clinics, the creation of facilities for the treatment of puerperal fever and for convalescence and the appointment of maternity nurses and municipal midwives. The first grant for maternity and child welfare, £56,809, was made in 1915; and with the Notification of Births Extension Act the Local Government Board offered subsidies for midwives' services, health visitors, obstetricians, welfare centers and hospital treatment. The Departmental Committee on Maternal Mortality and Morbidity in its 1932 report declared on the basis of several studies that at least 50 percent of maternal mortality is preventable and urged the establishment of a national maternity scheme under which the services of hospitals, clinics, specialists, practitioners and midwives would be coordinated.

Other portions of the British Empire have lagged behind England and Wales in their provision for maternity welfare. In Scotland the high degree of urbanization and the lack of coordination of services may in part account for the death rate, which is almost as high as in the United States. Canada's limited program and the problems presented by its widely scattered rural areas, the high degree of maternity mortality among the native races, especially in South Africa, as well as the difficulties involved in the formulation of a broad scheme to include both the white and the native populations make the problem of maternity protection in these lands somewhat similar to that of the United States. India is making an effort to formulate a program on the basis of the experience of New Zealand and Australia, where midwife and nursing service is provided by voluntary, semiphilanthropic organizations.

International recognition of the need for maternity protection dates from 1919, when the International Labor Conference proposed a legislative program dealing with the employment before and after childbirth of married and single women in industrial and commercial establishments; this scheme included a maternity leave of twelve weeks, six weeks before and six weeks after confinement, with maternity benefits, medical attendance and stipulated nursing periods. In 1921 these principles were extended to include women workers in agriculture. By August, 1932, eleven countries—Bulgaria, Chile, Cuba, Germany, Greece, Hungary, Latvia, Luxemburg, Rumania, Jugoslavia and Spain—had completely ratified these demands. More than twenty countries have arranged for maternity benefits under their compulsory sickness insurance laws. In others the general labor laws require abstention from work for stated periods and provide for a cash payment during that time. In some countries, however, especially in those of eastern Europe and South America, administration lags far behind legislation, while throughout central Europe the economic depression has made it impossible for governments to put the comprehensive programs into effect.

In contrast to the elaborate maternity welfare legislation of recent years in other countries the record of the United States is barren and inadequate, especially when its complicated social and racial composition, its vast area and high degree of industrialization and urbanization are taken into consideration. It has been said that in the United States more women of childbearing age die in childbirth than from any other single cause except tuberculosis. The high mortality record, which by no means justifies public indifference, is in part explained, however, by the method of registration. According to Sir Arthur Newsholme, if England used the same method of certification its death toll would be increased almost 15 percent. If the records of the various states are considered, these vary for 1929 from the low record of 43 per 10,000 live births for Minnesota and 49 for Utah to the high rate for southern states, ranging from 90 for Arkansas to 114 for South Carolina. Ten states including New York range from 50 to 60, thirteen from 60 to 70, eight from 70 to 80, seven from 80 to 90 and six from 90 to 114. For cities maternal mortality varies from the low rate of Oakland, California, with 31; Jersey City with 45; Hartford, Connecticut, with 46, to the rate of the southern cities, in some cases almost as high as in certain regions of India. Thus Birmingham, Alabama, records 144 deaths per 10,000 live births; Nashville, Tennessee, 147; and Memphis, in the same state, 160. No specific conclusions can be drawn concerning agricultural and industrial states: New York has the low rate of 56, and Vermont the high rate of 77. Unfortunately no study has yet been made of the close relation between maternal mortality and family income.

In the case of the southern states the high mortality rate of the Negroes undoubtedly serves to increase the general rate. Table II shows that colored (predominantly Negro) mortality rates are almost double white maternal mortality rates, probably serving to increase the rates of northern cities with large Negro populations.

TABLE II

DEATH RATES BY COLOR (PER 10,000 LIVE BIRTHS) FROM PUERPERAL CAUSES IN THE UNITED STATES BIRTH REGISTRATION AREA*

YEAR	TOTAL	WHITE	COLORED †
1929	70	63	120
1928	69	63	121
1927	65	69	113
1926	66	62	107
1925	65	60	116
1924	66	61	118
1923	67	63	109
1922	66	63	107
1921	68	64	108
1920	80	76	128

* As in Table I this area is an expanding registration area.
† Includes a small percentage other than Negro.
Source: Compiled from United States, Bureau of the Census, *Mortality Statistics, 1929* (1932).

The high mortality rate for the Negro population and the southern states is to be explained

in terms of poverty and of backwardness in health and social conditions, all aggravated by public indifference to Negro welfare. The higher incidence of illegitimacy in this population is another factor. Moreover, whereas in the country as a whole midwives—whose practise in the United States is entirely unregulated and subject to no requirements of training- attend only 15 percent of the births, over 87 percent of the 47,000 midwives are in eleven southern states.

Not only are midwives unlicensed and without special training, but there is no provision for specific obstetrical education for the general practitioner who is likely to be called on by the lower income classes. Less than a generation ago prenatal care was not taught in medical schools. There were probably more well organized *Frauenkliniken* in Germany sixty years ago than there are in the United States today. In 1929 the Council of Medical Education of the American Medical Association reported that of 1500 internes in approved teaching hospitals 334 graduates had had no experience in delivery, 235 had observed no deliveries, 200 had attended less than ten deliveries and only 70 had attended fifty or more.

There are in the United States no state systems of health insurance either voluntary or compulsory. Since the World War five states, Connecticut, Massachusetts, Missouri, New York and Washington, have prohibited the employment of pregnant women during certain periods, and even in these states there is neither guaranty of maintenance of position nor provision for maternity benefits. Federal effort has been limited to the creation of the Children's Bureau in 1912, which has done valuable educational work, and to the passage in 1921 of the Act for the Promotion of the Welfare and Hygiene of Maternity and Infancy known as the Sheppard-Towner Act. This act authorized an annual appropriation of $1,240,000 for five years, extended in 1927 for two additional years, to be divided among the states accepting its provisions requiring the maintenance through legislative authority of a child hygiene or child welfare division in the state agency of health. At the expiration of the act forty-five states and Hawaii had accepted this provision and were carrying on a program of urban and rural maternity and child welfare devoted mainly to prenatal and postnatal instruction for mothers and to special courses for midwives, nurses and physicians. In 1931 an unsuccessful attempt was made to revive the act through a new bill, and fewer than half of the states are carrying on the work to the same degree as in 1929.

Such advances as have been made are traceable for the most part to state public health departments and to the work of voluntary organizations. Seventeen states make no allowance for prenatal clinical services under their official public health agencies and fourteen out of sixty cities surveyed have no provision whatever, either public or private. Some states have set up educational services, using literature, the radio and the motion picture. A few have consultation clinics under the auspices of state boards of health; others have appointed regional consultants.

The American Public Health Association undertook a definite campaign for the protection of motherhood at the outset of the present century and in 1921 established a child hygiene section, which gives special attention to the problems of maternal and infant mortality. In 1925 the American Gynecological Society and the American Association of Obstetricians, Gynecologists and Abdominal Surgeons established a joint committee for maternal welfare to promote nation wide propaganda for better prenatal care, better obstetrical treatment and more rigid asepsis.

In the absence of adequate midwife service supplementary public health nursing systems have grown up in the United States largely under private auspices; such, for example, are the Henry Street Visiting Nurse Service and the Maternity Center Association, which operate in the congested slums of New York City, and the Frontier Nursing Service of Kentucky, which supplies trained midwives for rural areas where there are no resident physicians. In addition to midwifery service these nurses offer practical courses in public health, including maternity and infant welfare, and give prenatal and postnatal instruction. The effect of care and adequate service is evidenced in a study of the New York Maternity Center Association made with the cooperation of the statistical department of the Metropolitan Life Insurance Company. Of 4726 women cared for in the eight-year period from 1922 to 1929 (with some financial assistance from the Sheppard-Towner fund) not one woman under care died before delivery and only eleven died of puerperal infection within one month after delivery despite the fact that there were 123 stillbirths and 274 premature deliveries, of which 61 were miscarriages. The maternal mortality rate for this group per 10,000 live

births was 24 compared with the rate of 53 for all white women in New York City for 1922 to 1926 and of 62 for mothers not cared for in the district served by the center in the years from 1923 to 1928. This experience is similar to that of the East End Maternity Home in London, where there was but one case of puerperal infection among 47,000 women.

The White House Conference on Child Health and Protection (1930) through its committee on prenatal care came to the conclusion on the basis of statistics published that nearly 50 percent of maternal deaths were preventable by adequate medical care. It outlined a program which included better training of physicians in the fundamentals of obstetrics and the establishment of institutions for the training of midwives with facilities for postgraduate study. It recommended that the state boards of health develop standards for the education, supervision and control of physicians and midwives. The 1932 report of the Committee on the Costs of Medical Care in pointing out the great expense of medical treatment for working class families goes even further in suggesting socialized medicine.

All of these services and programs, however, fall short of a comprehensive, coordinated national program. So little has the problem been appreciated by the medical profession at large and by responsible administrative authorities that the only national provision through which the deaths of mothers were being prevented has been allowed to lapse.

S. P. BRECKINRIDGE

See: CHILD, section on CHILD AND INFANT MORTALITY; MOTHERS' PENSIONS; DAY NURSERY; LABOR LEGISLATION AND LAW; WOMEN IN INDUSTRY; SOCIAL INSURANCE; HEALTH INSURANCE; PUBLIC HEALTH; HEALTH EDUCATION; HEALTH CENTERS; CLINICS AND DISPENSARIES; BIRTH CONTROL; ILLEGITIMACY; MORTALITY; MORBIDITY; MEDICINE.

Consult: White House Conference on Child Health and Protection, *Obstetric Education*, Section I, Committee B, Subcommittee on Obstetric Teaching and Education, Report (New York 1932); Newsholme, Arthur, *International Studies on the Relation between the Private and Official Practice of Medicine with Special Reference to the Prevention of Disease*, vols. i–iii (London 1931–), and *Medicine and the State* (London 1932); League of Nations, Health Organization, *Report on Maternal Welfare and the Hygiene of Infants and Children of Pre-school Age by the Reporting Committee*, 1931. III. 13 (Geneva 1931); "Study of Certain Causes of Maternal Mortality" in League of Nations, Health Section, *Monthly Epidemiological Report*, vol. ix (1930) 279–306; International Labour Office, Women's Work under Labour Law, *Studies and Reports*, 1st ser., no. 2 (Geneva 1932); United States, Congress, Senate, Committee on Commerce, 72nd Cong., 1st sess., *Federal Cooperation with States in Promotion of General Health of Rural Population of United States and Welfare and Hygiene of Mothers and Children, Hearings* (1932); United States, Children's Bureau, "Promotion of the Welfare and Hygiene of Maternity and Infancy," *Publication*, no. 203 (1931), and "Maternal Mortality" by R. M. Woodbury, *Publication*, no. 158 (1926); United States, Bureau of the Census, *Mortality Statistics, 1929*, Annual Report, vol. xxx (1932) 12, 36–39, 100, 135, 168, 210, 221, 225, 425, 514; Wiehl, D. G., "Prenatal Care of Rural Mothers" in Milbank Memorial Fund, *Quarterly Bulletin*, vol. ix (1931) 95–102; Hughes, G. S., *Mothers in Industry* (New York 1925) ch. xi; Frankel, L. K., *The Present Status of Maternal and Infant Hygiene in the United States* (New York 1927); Canada, Department of Health, Division of Child Welfare, *Maternal Mortality in Canada* (Ottawa 1928); Macphail, E. S., "Statistical Study in Maternal Mortality" in *American Journal of Public Health*, vol. xxii (1932) 612–26; Great Britain, Ministry of Health, *Final Report of the Departmental Committee on Maternal Mortality and Morbidity* (London 1932), and Departmental Committee on Maternal Mortality and Morbidity, *Interim Report* (1930), and "The Protection of Motherhood," by J. M. Campbell, *Reports on Public Health and Medical Subjects*, no. 48 (1927); Scotland, Scottish Board of Health, *Maternal Mortality, Report on Maternal Mortality in Aberdeen 1918–1927*, by J. P. Kinloch, J. Smith, and J. H. Stephen (Edinburgh 1928); Goldschmidt, H., "The Application in Germany of the Washington Convention concerning the Employment of Women before and after Childbirth," and "The Employment of Women before Childbirth in German Industry" in *International Labour Review*, vol. xvi (1927) 637–47, and vol. xviii (1928) 86–92; *Die Wirkungen der Fabrikarbeit der Frau auf die Mutterschaft*, Arbeit und Gesundheit, no. xiv (Berlin 1930); Hirsch, Max, *Mutterschafts-Fursorge*, Monographien zur Frauenkunde und Konstitutionsforschung, no. 15 (Leipsic 1931); Field, A. W., *Protection of Women and Children in Soviet Russia* (New York 1932); Association Internationale pour la Protection de l'Enfance, *Protection de la mère et de la future mère* (n. p. 1927); Garbasso, A., "Le nuove provvidenze assicurative per la maternità" in *Assicurazioni sociali*, vol. v, no. 3 (1929) 1–15; Aznar, S., "The Introduction of Maternity Insurance in Spain" in *International Labour Review*, vol. xx (1929) 185–206; Pillay, A. P., *Welfare Problems in Rural India* (Bombay 1931), especially ch. v; India, "Indian Maternity Benefit Schemes," *Bulletin of Indian Industries and Labour*, no. 32 (Calcutta 1925).

MATHER, INCREASE and COTTON, American theologians. Increase Mather (1639–1723) became pastor of the Old North Church in Boston in 1664 and for the next thirty years was the religious leader of New England and probably the most influential person in Massachusetts. His son Cotton (1663–1728), for years his colleague and mouthpiece, inherited his role. Their lives were devoted to a struggle to maintain orthodox Calvinist theology, Congregational

church government and the power of the clergy as established by the founders of New England. In their voluminous writings they strove to inculcate a somewhat formal obedience to moral law and to frighten sinners by threats of temporal punishment. In politics they traced the fulfilment of Biblical prophecy, believing the end of the world to be close at hand. Both took great interest in science always from a teleological point of view; they gathered data for English scientists and helped introduce smallpox inoculation into New England. They wrote several books describing witchcraft in New England, and Cotton Mather took a prominent part in the Salem persecution of 1692. As a result the Mathers' popularity waned. Their influence was weakened by the charter of 1691, under which the governor was appointed by the king instead of being elected by the freemen. The growth of an Arminian tendency in the churches of eastern Massachusetts upset their theological monopoly. Greedy of power and vain—Cotton's diary records repeated assurances that his labors were pleasing to God—they fought a losing fight against the rising secular views of the upper class of New England. In 1701 Increase was ousted from the presidency of Harvard; and although their preeminence in learning and piety was never challenged, the Mathers lost political influence and ecclesiastical control. Their fall spelled the end of the Puritan theocracy.

H. B. PARKES

Consult: Schneider, Herbert W., *The Puritan Mind* (New York 1930); Murdock, K. B., *Increase Mather, the Foremost American Puritan* (Cambridge, Mass. 1925); Boas, R. and L., *Cotton Mather, Keeper of the Puritan Conscience* (New York 1928).

MATHIEZ, ALBERT (1874–1932), French historian. Mathiez went through the normal discipline of French academic historians, became a disciple of Aulard and until their quarrel in 1904 was regarded as the master's logical successor. This quarrel, Mathiez' political sympathies with the extreme left and his unwillingness to adapt himself to the likes and dislikes of his colleagues long kept him from succeeding Aulard at the Sorbonne. Before he died, however, he had the satisfaction of a call to Paris. Although he taught in the provinces for some twenty years he worked constantly in the archives. Most of his work appeared in the form of articles or book reviews in the *Annales révolutionnaires* (1908–23, continued under the title *Annales historiques de la Révolution française*, 1924–), which he founded and edited until his death. He did, however, write a general history of the revolution, the first three volumes of which were published as *La Révolution française* (3 vols., Paris 1922–27; tr. by C. A. Phillips, 1 vol., New York 1928) and the fourth as *La réaction thermidorienne* (Paris 1929; tr. by C. A. Phillips as *After Robespierre: the Thermidorian Reaction*, New York 1931). The work is extremely condensed, addressed to the general public, clearly and simply written, relatively free from disputations with other writers. Mathiez' more important monographic writings include *La théophilanthropie et le culte décadaire 1796–1801* (Paris 1904), *Rome et le clergé français sous la Constituante* (Paris 1911), *Un procès de corruption sous la Terreur: l'affaire de la Compagnie des Indes* (Paris 1920), *La vie chère et le mouvement social sous la Terreur* (Paris 1927). At his death he was universally recognized as the leading historian of the French Revolution.

Mathiez' work is an extraordinary compound. He held rigorously to the notion that the historian must relate "how it really happened," that he can and must be completely impartial, that he must spend most of his time in the archives. He considered himself a "scientific" historian as that phrase was understood in the late nineteenth century; for the "new," or sociological, history he had nothing but contempt. Yet he was the first professional historian to popularize the economic interpretation of the French Revolution. He must undoubtedly be classed with the prorevolutionary historians: no member of the official school assailed the conservatives more bitterly or more fervently defended the First Republic against the attempts of the school of Taine to explain it as the product of political intrigue rather than of circumstances. But he broke with Aulard and the orthodox republicans, superficially because he asserted that Danton was a traitor not a hero, more profoundly because he could not accept the liberal mythology of the great revolution. Although the general public always identified him with Marxism and although he admired Jaurès sufficiently to undertake a laborious reedition of the *Histoire socialiste de la Révolution française* (8 vols., Paris 1922–24), it was not the dictates of socialist dogma which determined his approach. He was drawn to the economic interpretation of history by the conviction that human beings are moved by appetites and interests, not by words. After Aulard's willingness to take the word for the deed such a point of view could not help but

freshen the study of the subject. Mathiez succeeded in casting off the accretions which time had added to the revolutionary myth; he illuminated the gap between the revolution and the Third Republic of the early twentieth century with its compromises and softness, with its mouthing of "Liberty, equality and fraternity" to sanctify a system of middle class rule. He made himself a Jacobin, a true Jacobin of 1794, and brought to his work the unyielding religious idealism (a phrase he would have loathed) of the makers of the Terror. This scorner of mere phrases held up as the hero of the revolution its greatest phrasemaker—and therefore perhaps its greatest prophet—Robespierre, whom he depicted as a practical man, a gifted leader, an upright statesman working for an attainable democratic republic. Mathiez' integrity, industry and frequent hardheadedness have uncovered much that but for him would still lie unburied. He was a master of invective, a talent he displayed especially in his book reviews. His work was rigorously limited to the French Revolution; and, true to his conception of history as the objective narration of the unique, he never attempted to draw upon his knowledge of the revolution to produce generalizations on the behavior of men in society.

CRANE BRINTON

Consult: Memorial number of the *Annales historiques de la Révolution française*, vol. ix (1932) no. 3; Caillet-Bois, R. R., "Bibliografía de Albert Mathiez" in Buenos Aires, University, Instituto de Investigaciones Históricas, *Boletín*, vol. xiv (1932) 268–453; Michon, Georges, "Albert Mathiez, rénovateur de l'histoire de la Révolution française" in *Europe*, vol. xxix (1932) 152–71.

MATLEKOVITS, SÁNDOR (1842–1925), Hungarian economist. Originally under the influence of the German historical school, Matlekovits gradually shifted his position toward the English classical views until he finally became the outstanding Hungarian representative of economic liberalism. As tariff expert and representative of the Hungarian government he asserted his free trade views in negotiations of commercial treaties; his liberal industrial policy was incorporated into the Hungarian industrial bill of 1884, which was prepared by him and remained in force for nearly fifty years. In the course of his treaty negotiations between the Reich and the Hapsburg monarchy he clashed with Bismarck, who from 1879 urged the agrarian-protectionist trend—a tendency which found its way into the Austro-Hungarian customs tariff of 1882. After Bismarck's retirement the policy of commercial treaties was revived in central Europe in 1889; at that time, however, Matlekovits was no longer in office, having resigned in the same year as undersecretary of state for commerce.

Matlekovits' main work, *Az osztrák-magyar monarchia vámpolitikája 1850-től kezdve napjainkig* (Budapest 1877), revised in German as *Die Zollpolitik der österreichisch-ungarischen Monarchie und des Deutschen Reiches seit 1868 und deren nächste Zukunft* (Leipsic 1891), written with a view to influencing the commercial relations of mid-European countries in the direction of free trade, is a standard treatise on the commercial policy of Austria-Hungary and Germany and contains a penetrating analysis of the effect of customs duties on production and formation of prices. His other works include *Magyarország államháztartásának története 1867–1893* (2 vols., Budapest 1894; tr. into German as *Geschichte des ungarischen Staatshaushaltes*, Vienna 1895), which still constitutes a valuable source of Hungarian history; *Das Königreich Ungarn volkswirtschaftlich und statistisch dargestellt* (2 vols., Leipsic 1900), which contains an integrated account of the social and economic conditions in pre-war Hungary; and "Die handelspolitischen Interessen Ungarns" (in *Verein für Sozialpolitik, Beiträge zur neuesten Handelspolitik Österreichs*, Schriften, vol. xciii, Leipsic 1901, p. 1–60), in which he defended the interests of the Austro-Hungarian monarchy, especially those of Hungary, against Germany's prohibitive tariff policy. His last major effort was directed against the strongly protectionist Hungarian tariff act of 1924. Subsequent events fully justified Matlekovits' views; the attempts of the small central European states at economic self-sufficiency contributed considerably to the economic and financial collapse of central Europe in 1931–32.

ELEMÉR HANTOS

Consult: Naményi, E., *Matlekovits Sándor* (Budapest 1923); Éber, A., in *Közgazdasági szemle*, vol. lxix (1926) 121.

MATOV, KHRISTO (1872–1922), Bulgarian-Macedonian revolutionary. Matov, who was a teacher and school inspector in the Uskub region, assisted Gruev and Delchev in the foundation of the Interior Macedonian Revolutionary Organization (IMRO) in 1893. Modeled on the Italian Carbonari, the IMRO aimed to liberate Macedonia from the Turkish yoke; after

Macedonia became part of Serbia it struggled against Serbian domination. In 1895 Matov became a member of its central committee. For decades he was one of its principal organizers and terrorist plotters, playing a leading role during the widespread insurrectionary movement of 1903 and in the movement of resistance to Serbian and Greek propaganda and foreign interventionism. He founded the village militia, a sort of revolutionary gendarmery, as well as other special branches of the movement both legal and illegal. He was several times imprisoned by the Turks and attacked by assassins.

The leading theorist and agitator of the IMRO, he popularized by speeches and writings knowledge of its aims, methods and problems. Against the current of foolhardiness common in the movement Matov successfully advocated planned organization and the basing of tactics (including individual terror) on the needs of specific occasions. This approach was always empirical rather than dogmatic, and he strove to base his thinking on a concrete study of local social conditions. He was the first to try to analyze the relative values of individual terrorism and popular insurrection, of organizational centralization and decentralization of legal and illegal methods of struggle, and to formulate clear policies on the questions of foreign intervention, the Young Turk reforms and the expansionism of the Bulgarian government.

JOSEF MATL

Works: Matov's works are collected in the *Makedonska revoliutsionna biblioteka*, vols. i–iv (Sofia 1925–28).

Consult: Brusnakov, in *Damé Grouev, Perè Toschev, Boris Sarafov, Ivan Garvanov, Christo Matov*, Pro Macedonia series, no. 3 (Sofia 1925).

MATRIARCHATE. *See* SOCIAL ORGANIZATION.

MATTEOTTI, GIACOMO (1885–1924), Italian socialist. The son of a fairly wealthy family of the agrarian middle class in Veneto, Matteotti studied law at the University of Bologna, wrote an interesting and instructive treatise on recidivism in criminal law and contributed to the *Rivista penale*, the most important review devoted to the study of criminal law in Italy. In common with other middle class intellectuals who at the time were turning to socialism Matteotti early became a Socialist and identified himself with the reformist wing of the party. He was elected to a number of local and provincial offices and then to the Chamber of Deputies, where his activity, although not particularly distinguished, was marked by industry, precision in the analysis of facts and documents and a quiet strength born of intellectual conviction. He was imprisoned for opposing Italy's participation in the World War.

Matteotti's reputation is largely due to the struggle he waged against triumphant Fascism. He became the leader of the dwindling parliamentary opposition, secretary of the considerably weakened Socialist party and the most redoubtable and practically the only vocal adversary of the Fascist government. His fearless criticism was based on the law, justice and democracy, on documentary evidence of the oppressive character of the new regime, on an appeal to all the classes. With the consolidation of Fascist power and its support by the middle class, however, Matteotti became isolated. Nevertheless, he continued to criticize the Fascist regime even when everyone, including himself, knew that his life was in danger. On May 30, 1924, Matteotti delivered an address in the chamber against Fascist intimidation and frauds in the elections of the previous month, during which he was interrupted and insulted by deputies whose election was due to the machinations he denounced. Ten days later Matteotti was kidnaped in the street, carried away in an automobile and killed. It was established that a certain Amerigo Dumini was the driver of the automobile. A year and a half later the judicial authorities in Rome ruled that Dumini and his accomplices had not committed the crime on their own initiative. At the trial in Chieti, in March, 1926, the verdict was given as unintentional homicide. Cesare Rossi, who at the time of the murder was one of the most intimate associates of Mussolini, and Dumini himself declared that Matteotti was assassinated upon direct order of Mussolini, which Mussolini denied. Matteotti's murder created an enormous revulsion of public sentiment and a crisis which almost wrecked the Fascist regime, but the disorganized opposition was unable to utilize the opportunity for effective action.

ARTURO LABRIOLA

Important works: *Il concetto di sentenza penale e la dichiaraz, d'incompetenza in particolare* (Turin 1919); *Un anno di dominazione fascista* (Rome 1924), tr. by E. W. Dickes as *The Fascisti Exposed: a Year of Fascist Domination* (London 1924); *Reliquie* (Milan 1924).

Consult: Gobetti, P., *Matteotti* (Turin 1924); Mariani, Mario, *Matteotti* (Paris 1927); Salvemini, G., "L'af-

faire Matteotti" in *Europe*, vol. x (1926) 76–97, tr. as "A Story of Crime: the Murder of Matteotti" in *Review of Reviews* (London), vol. lxxiii (1926) 49–55; Fuchs, James, "Why Matteotti Had to Die" in *Nation*, vol. cxix (1924) 114–15; "The Matteotti Trial" in *Review of Reviews* (London), vol. lxxiii (1926) 304.

MAUDSLEY, HENRY (1835–1918), British alienist and psychologist. Maudsley was born in Yorkshire and was educated at University College, London, where he took his degree in medicine in 1857. He served as medical superintendent at the Manchester Royal Lunatic Hospital from 1859 to 1862 and developed an interest in the psychological and legal phases of the problem of insanity. For ten years (1869–79) he was professor of medical jurisprudence at University College. His most important writings date from this period, and his *Physiology and Pathology of Mind* (London 1867; enlarged and revised separately as *Physiology of Mind*, London 1876, and *Pathology of Mind*, new ed. London 1895) early gave him a vast reputation. In his later years he wrote a number of works on moral and philosophical topics.

Maudsley is today remembered chiefly as one of the first to attempt to bring together material from the fields of physiology, pathology and psychology for the development of what was later to become the science of psychiatry. For him mental disease had its basis in the biological and psychological realms but was to be regarded at the same time as a social phenomenon which could be investigated satisfactorily only from a social point of view. His interest in mind-body relationships led him to question the superstitious reverence for the legal criterion of responsibility, for, as he pointed out, one may know an act to be unlawful and yet be impelled to commit it by a conviction or an impulse which one is powerless to resist. He also attacked the faculty conception of will, arguing that "the will apart from particular acts of volition and will we cannot know. . . . It is the property of tissue which gives the impulse which we call volition and it is the abstraction from the particular volitions which metaphysicians personify as the Will." Maudsley's physiological approach to mental problems did not prevent him from utilizing the conception of the unconscious, whose existence he explained, however, on the basis of brain arrangements. Maudsley believed that there are cases of absence or destruction of the moral sense resulting from pathological brain conditions or from incomplete development. He held that criminals need scientific treatment, differing from that of the insane but along the same general lines.

WILLIAM HEALY

Other important works: *Responsibility in Mental Disease* (London 1874, 5th ed. 1892); *Body and Mind* (London 1870, rev. ed. 1873); *Natural Causes and Supernatural Seemings* (London 1886, 3rd ed. 1897); *Life in Mind and Conduct* (London 1902); *Heredity, Variation and Genius* (London 1908).

Consult: Savage, G. H., and others, "Henry Maudsley" in *Journal of Mental Science*, vol. lxiv (1918) 118–29.

MAURER, GEORG LUDWIG VON (1790–1872), German jurist and social historian. Born in a Protestant clerical family of the Palatinate and educated in the *Gymnasium* and the University of Heidelberg partly as a comrade of the later King Ludwig I of Bavaria, he symbolized in his character and work the temper of the Rhinelander convinced that many of the ideals of the French Revolution were but the rediscovery of older Germanic constitutional principles. Author of a *Geschichte des altgermanischen und namentlich altbayerischen öffentlich-mündlichen Verfahrens* (Heidelberg 1824) which championed the principles of orality, publicity and lay participation in procedure, he was called to introduce the jury into the Bavarian courts and then to occupy a chair of German private law and legal history at Munich. As member of the Bavarian *Staatsrat* and *Reichsrat* he proceeded in 1832 to accompany the newly elected king of Greece, Ludwig I's son Otto, in the capacity of a member of the regency council during the prince's minority, but his partiality for a parliamentary government soon brought him into conflict with the other regents. No more lucky was his short activity on the eve of the Revolution of 1848 as Ludwig I's minister for justice and foreign affairs.

His removal from public affairs left Maurer free to work on the great series of monographs on the different forms of the mediaeval German community which served as the chief foundation of Gierke's later and more famous work, while at the same time through Friedrich Engels they furnished a less critical corner stone for the Marxian interpretation of German social and constitutional history. Although a strong liberal and democratic bias symbolical of his age is unmistakable in Maurer's pervading viewpoint of popular autonomy and self-government, Gierke's somewhat different accent and the equally strong leanings of the school of Georg

Waitz toward an individualistic and seigniorial viewpoint have up till now prevented German constitutional history from doing full justice to Maurer's work. In fact the question as to the oldest forms of European administrative and agricultural organization is still largely open.

CARL BRINKMANN

Important works: *Geschichte der Markenverfassung in Deutschland* (Erlangen 1856); *Geschichte der Fronhöfe, der Bauernhöfe und der Hofverfassung in Deutschland*, 4 vols. (Erlangen 1862–63); *Geschichte der Dorfverfassung in Deutschland*, 2 vols. (Erlangen 1865–66); *Geschichte der Städteverfassung in Deutschland*, 4 vols. (Erlangen 1869–71).

Consult: Stintzing, R. von, and Landsberg, E., *Geschichte der deutschen Rechtswissenschaft*, 3 vols. (Munich 1880–1910) vol. iii, pt. ii, p. 308–11, 531–32, and 542–43; Schmoller, G., *Deutsches Städtewesen in älterer Zeit*, Bonner Staatswissenschaftliche Untersuchungen, no. 5 (Bonn 1922) p. 5–8; Heigel, K. T. von, "Denkwürdigkeiten des bayerischen Staatsrats Georg Ludwig von Maurer" in Bayerische Akademie der Wissenschaften, Philosophisch-philologische und historische Klasse, *Sitzungsberichte* (1903) 471–512.

MAURER, KONRAD VON (1823–1902), German legal historian. Konrad von Maurer, the son of the legal historian Georg Ludwig von Maurer (1790–1872) studied jurisprudence and philology in Munich, Leipsic and Berlin under such famous teachers as Albrecht, Homeyer, Grimm and Richthofen. His doctoral thesis, *Über das Wesen des ältesten Adels der deutschen Stämme* (Munich 1846), evidenced such unusual abilities that in 1847 he was appointed professor extraordinary and in 1855 professor of German law in Munich. In 1876 he lectured on Norse legal history at Christiania. He had confined himself increasingly from 1868 on to the study of this subject and in 1888 discontinued teaching, devoting himself thereafter entirely to research.

Maurer was a jurist, historian and philologist and was deeply interested in the philosophy of religion and folklore; he did pioneer work in many fields of Germanic study. His doctor's dissertation and three other papers dealing with Anglo-Saxon law were unusually fruitful works in which the author laid down the basic lines of the Anglo-Saxon law of status and of real property. It was Maurer also who stimulated Felix Liebermann's edition of the Anglo-Saxon law.

He was primarily interested, however, in clarifying the Norse past. He introduced the Norse sagas and Eddas as historical sources, although he later became somewhat more cautious and skeptical of their reliability. A great number of his works were concerned with Scandinavian legal sources, in which field very little scientific work had been done and in which his work, so far as it went, was conclusive. The Norse law books were explained as original private records of the *lagsaga*, first written down in the twelfth century. He investigated most critically the legal technique of the Norse peoples, especially the office of the law speaker and the organization of the thing, the local assembly. He not only furthered the knowledge of the law governing the various estates, those of the nobility, serfs and freedmen, but also advanced private law, criminal law, the law of procedure, especially that of the ordeal, and family law. The last gave him a special opportunity to weigh the obscure and conflicting sources and to elucidate their chronological evolution.

Maurer's interest centered chiefly in Iceland. He continually investigated the development of the state in Iceland, where alone in the Germanic world it is possible to trace the growth of the state from the first immigration, from the *goðorð*, that is, the chieftaincies, to the unification. In 1852 appeared his first book on Iceland, *Die Entstehung des isländischen Staates und seiner Verfassung* (Munich), which was translated into Icelandic in 1882. In 1874 he published *Island, von seiner ersten Entdeckung bis zum Untergange des Freistaates* (Munich), a constitutional and cultural study which amplified his earlier work and covered also the later period. Maurer took a lively interest in the contemporary condition of the island. He not only collected Icelandic sagas but through the press continually aided the Icelandic struggle for freedom.

Maurer's studies of ecclesiastical history and canon law attracted considerable attention. His most comprehensive work in this field was *Die Bekehrung des norwegischen Stammes* (2 vols., Munich 1855–56), where he portrayed the history of the conversion of the Norwegian people with absolute accuracy and psychological profundity. In no other work has the transition from Germanic paganism to Christianity been so clearly observed or have the mixed elements which affected the period of transition—Germanic culture and the southern influences—been so sharply distinguished. The problem of the connection between the law and religion especially stimulated valuable research.

The list of Maurer's writings includes over three hundred titles. The many aspects of his work and of his learning made it possible for

him thoroughly to review foreign works. His critiques, which occasionally amounted to monographs and which appeared in various learned periodicals, aroused widespread interest and furthered the relations between German and Norse scholars. Maurer had many disciples both in Germany and Scandinavia, the greatest of whom was Karl von Amira.

EBERHARD VON KÜNSSBERG

Works: "Überblick über die Geschichte der nordgermanischen Rechtsquellen" in *Enzyklopädie der Rechtswissenschaft*, ed. by F. von Holtzendorff, vol. i (5th ed. Leipsic 1890) p. 349–85, enlarged in Norwegian as *Udsigt over de nordgermaniske retskilders historie* (Christiania 1878); "Zwei Rechtsfälle in der Eigla," and "Zwei Rechtsfälle aus der Eyrbyggia" in Bayerische Akademie der Wissenschaften, Munich, Philosophisch-historische Klasse, *Sitzungsberichte* (1895) 65–124, and (1896) 3–48; *Das älteste Hofrecht des Nordens, eine Festschrift zur Feier des vierhundertjährigen Bestehens der Universität Upsala* (Munich 1877); "Über die Wasserweihe des germanischen Heidenthumes" in Bayerische Akademie der Wissenschaften, Munich, Philosophisch-historische Klasse, *Abhandlungen*, vol. xv, pt. iii (1881) 173–253.

Consult: Mayer, Ernst, "Konrad Maurer" in *Zeitschrift der Savigny-Stiftung für Rechtsgeschichte, Germanistische Abteilung*, vol. xxiv (1903) v–xxvii; Amira, Karl von, *Konrad von Maurer, Gedächtnisrede* (Munich 1903); Golther, Wolfgang, in *Zeitschrift für deutsche Philologie*, vol. xxxv (1903) 59–71; Hertzberg, Ebbe, in *Historisk tidskrift*, vol. iii (1875) 367–84; Taranger, Absalon, in *Tidsskrift for retsvidenskab*, vol. xvi (1903) 1–29; Van Vleuten, M., in *Kritische Vierteljahresschrift für Gesetzgebung und Rechtswissenschaft*, vol. xlv (1904) 1–26, with bibliography of Maurer's works.

MAURICE, FREDERICK DENISON (1805–72), English theologian. Maurice was brought up as a Unitarian, his father being a preacher of that sect, but his views changed and he was ordained priest in the Church of England. His opinions remained strongly heterodox, however, and most of his life was spent in acute theological controversy with all the leading church parties of his day—High, Low and Broad alike. He had radical sympathies from the first, but he took no direct part in political or economic movements until the time of the French Revolution of 1848, when he became the central figure of the group which under J. M. Ludlow's inspiration founded the Christian Socialist movement. With Ludlow he edited *Politics for the People*, the first Christian Socialist organ, to which Charles Kingsley was a prominent contributor. At the earlier conferences of the Christian Socialists he was usually in the chair, and he was closely connected with their endeavors to found self-governing workshops and to secure legal recognition for the cooperative movement. This occupied much of his energy in the years from 1848 to about 1855, but thereafter with the failure of the Christian Socialist cooperative associations he dropped out of political and economic activity. He continued, however, to interest himself keenly in working class education. While professor of English literature and history at King's College, London, from 1840 to 1853 he cooperated in founding Queen's College, designed especially to help women who wanted training as governesses. After he had been driven from King's College on charges of theological heterodoxy he founded in 1854 the (London) Working Men's College. He became its first principal and gathered round him there a distinguished body of voluntary lecturers of very varying views. In 1866 he was elected to a professorship of philosophy at Cambridge, but he continued his relations with the Working Men's College.

Maurice's writings, of which the best known is *The Kingdom of Christ* (London 1837, 3rd ed. 1883), are almost wholly theological apart from an early novel and a good deal of journalism. In his own day he counted far more as a person than as a writer, having an eminent power of attracting friends and disciples round him and a remarkable gift for influencing his associates by his talk. Politically he was never a socialist in any ordinary sense, although he was a radical in opinion. It was only the excitements of 1848 that drew him into political and economic movements, and he seems to have been uncomfortable in the part he found himself called upon to play in them. He was an educationist in a far more real sense; and in that field far more of his work survives.

G. D. H. COLE

Consult: Maurice, F., *The Life of Frederick Denison Maurice*, 2 vols. (2nd ed. London 1884); Masterman, C. F. G., *Frederick Denison Maurice* (London 1907); Raven, Charles E., *Christian Socialism 1848–1854* (London 1920); Courtney, J. E. H., *Freethinkers of the Nineteenth Century* (London 1920) p. 11–64; Seligman, Edwin R. A., *Essays in Economics* (New York 1925) p. 33–57.

MAUVILLON, JAKOB (1743–94), German physiocrat. Mauvillon's significance consists in having introduced the physiocratic system into Germany. The fact that the system was introduced not in Quesnay's original version but on the basis of Turgot's *Réflexions sur la formation et la distribution des richesses* (1766), which Mauvillon had translated into German in 1775, is of

considerable importance in the evolution of German economic thought. It helps to explain the lack of comprehension on the part of German physiocracy of the philosophical starting point of the original physiocracy concerning the dualism of *ordre naturel* and *ordre positif*, which is given only in Quesnay's original form, and it may also explain how physiocracy was reduced in Mauvillon's mind to the mere doctrine of free trade. In his trade policy Mauvillon was much more extreme than the French physiocrats; his economic liberalism found its theoretical support in his concept of the state, according to which the latter is regarded as in the doctrine of the purely juridical state as a "system of private persons" which abstains from all interference with the private activities of the people. Mauvillon was an adherent of the *impôt unique* on land; while he admitted that the usual systems of taxation based on indirect taxes would produce the same effect as the *impôt unique*, since the taxes are ultimately shifted upon the landowners, he advocated the latter form because of its low collection cost and other advantages. Mauvillon's tax theory is not free from mercantilistic elements and he sees the just measure for levying taxes not in the actual but in the potential national requirements as revealed in "the powers of the state, its size, amount of population, and wealth." He collaborated with the younger Mirabeau in the latter's *De la monarchie prussienne, sous Frédéric le Grand* (London 1788). Here also Mauvillon's cameralistic leanings are apparent; the summary of his political philosophical system follows along the lines of cameralistic systematics. In the cameralistic spirit too is his conception of statistics, which he developed in the *Monarchie prussienne* and which going beyond mere description aimed to furnish a contribution to the "philosophical" theory of the state.

LOUISE SOMMER

Works: *Sammlung von Aufsätzen über Gegenstände aus der Staatskunst, Staatswirtschaft und neuesten Staatengeschichte*, 2 vols. (Leipsic 1776–77) vol. ii; *Briefwechsel*, ed. by F. Mauvillon (Brunswick 1801); *Physiokratische Briefe an den Herrn Professor Dohm, oder Verteidigung und Erläuterung der wahren staatswirtschaftlichen Gesetze, die unter dem Namen des physiokratischen Systems bekannt sind* (Brunswick 1780).

Consult: Roscher, W., *Geschichte der Nationalökonomik in Deutschland* (Munich 1874) p. 493–94; Reissner, H., *Mirabeau und seine "Monarchie Prussienne"* (Berlin 1926). For controversy between Mauvillon and Dohm, see Dohm, C. W., "Über das physiokratische System" in *Deutsches Museum*, vol. ii (1778) 289–324.

MAVOR, JAMES (1854–1925), Canadian economist, historian and public servant. The son of a Scottish school teacher, Mavor left school at fourteen to become a drysalter's apprentice in Glasgow but continued his education in night classes at Anderson's College. His omnivorous interest in men and ideas made him something of a Boswell and commended him to a circle of outstanding men which steadily widened to include England, the continent and North America. In 1892 W. J. Ashley chose him as his successor in political economy at the University of Toronto. Although he took part in some of the British collectivist movements in the 1880's and 1890's, Mavor became essentially the conservative, or individualistic, social critic, as was revealed in his official and semi-official investigations of Scottish railway administration, European housing projects and reform colonies, workmen's compensation, immigration policies for the Canadian northwest and the provincially owned systems of telephones in Manitoba and of electric power in Ontario. He provided much ammunition for the opponents of public ownership in North America and for thirty years his criticisms of socialistic trends provoked considerable discussion.

While in Europe investigating emigration to Canada he was induced by his friend Kropotkin to arrange for the settlement in Alberta of the Russian pacifist sect, the Dukhobors. This led to acquaintance with Tolstoy and to an interest in Russian life and history resulting in his best known work, an economic history of Russia, which he wrote with the assistance of Pantelemon Nikolaiev, while borrowing extensively from Kluchevsky's works. An analogous economic history of Canada was projected but never published. His influence, undoubtedly considerable in the scholarly world, was largely personal and provocative.

J. BARTLET BREBNER

Important works: *Report . . . on the North West of Canada* (London 1905); *Government Telephones* (New York 1916); *An Economic History of Russia*, 2 vols. (London 1914, 2nd ed. 1925); *The Russian Revolution* (London 1928); *Niagara in Politics* (New York 1925); *My Windows on the Street of the World*, 2 vols. (London 1923).

MĀWARDI, ABU AL-ḤASAN AL- (*c.* 972–1058), Moslem jurist. Scant information regarding the life of al-Māwardi is available in Arabic sources. They indicate, however, that he was born in Basra, became a preeminent *Mudarris*, or professor of Islamic law, was asked by the

Abbasside caliphs of Bagdad to become a judge and finally attained the highest rank in the hierarchy, that of *Qāḍi al-Quḍāt*, more or less equivalent to chief justice.

Of his many treatises that which won him high renown and extreme regard in the legal world of the Moslems was *Kitāb al-Aḥkām al-Sulṭānīya*. In it al-Māwardi did not attempt to produce an original conception of some ideal system of government in the way of the *Utopia* of Sir Thomas More or the "Salente" of Fénelon's *Télémaque*; such a work would have been of no legal worth. His book deals instead with strictly orthodox (Sunna) doctrine and is accordingly uniquely valuable for the study of the Sunnite Islamic interpretation of public law—in contradistinction to that of the Shiite schism of Persia. Islamic law does not discriminate between what Europeans call canon, civil and public law; and its rules concerning the last are as a result scattered amongst the thousands of pages of the bulky treatises of Moslem jurisprudence. What al-Māwardi achieved was the collection and systematic exposition in one distinct work of all the orthodox Islamic rules referring to the several provinces of public law as it was conceived in orthodox Islam. First he expounded in great detail the law of the caliphate, the source, in Islamic doctrine, of all legitimate authority. Pursuing this trend of inquiry he discussed the law concerning all the series of authorities created by delegation of the universal power of the caliph and explained especially the system, fundamental in Islamic law, of the law of war. He expounded also the regulations concerning conquest, the status of non-Moslem subjects, taxes and finance, judicial power and the rights and duties of the police, carefully indicating in each case the controversies which had arisen between the representatives of the four orthodox doctrines of Islam (Hanafite, Shafiite, Malikite, Hanbalite) as well as the theories put forward by dissenters.

LÉON OSTROROG

Works: The *Kitāb al-Aḥkām al-Sulṭānīya* has been edited as *Maverdii constitutiones politicae* by M. Enger (Bonn 1853), tr. into French by E. Fagnan as *Les statuts gouvernementaux* (Algiers 1915).

Consult: Ostrotog, Léon, Preface to his partial translation of the Kitāb, *El-ahkâm es-soulthânîya: Traité de droit public musulman*, 2 vols. (Paris 1901–06) vol. i, p. iv–ix; Fagnan, E., Introduction to his translation of the Kitāb, p. v–xiii; Carra de Vaux, B., *Les penseurs d'islam*, 5 vols. (Paris 1921–26) vol. i, p. 273–77, and vol. iii, p. 349–60; Arnold, T. W., *The Caliphate* (Oxford 1924) p. 70–72.

MAXWELL, SIR WILLIAM (1841–1929), Scottish cooperative leader. Maxwell, who was born of working class parents in Glasgow, began work at the age of ten and at twelve was apprenticed to a coach builder. He supplemented his meager education by night school study and at the age of twenty made a tour of the British Isles on foot in order to observe living and working conditions. Through his reading on the Rochdale system of cooperation and his contact with an uncle who was then treasurer of the Lennoxtown Cooperative Society (established in 1812 and the oldest surviving cooperative society today) he became vastly interested in the cooperative movement. He joined St. Cuthbert's Cooperative Association in Edinburgh in 1874 and became a noted propagandist for the cause. In 1880 he was elected director of the Scottish Cooperative Wholesale Society and a year later was elected to its presidency, holding the office until his voluntary retirement in 1908. From 1907 until 1921 he was president of the International Cooperative Alliance. He was made a knight of the British Empire in 1919.

Under Maxwell's direction the Scottish Wholesale Society, which previously had been only a distributive organization, embarked upon production. Its first venture was in shirt making, the most sweated of all industries, and was speedily followed by factories for the production of other necessities. During the period of his office the turnover of the society increased from £850,000 to £7,500,000 per annum. On the principle that cooperative societies which could not supply all needs should combine, he advocated and saw instituted the partnership between the English and Scottish cooperative wholesale societies. He fought for and succeeded in establishing the right of employees of the Scottish Wholesale Society to be shareholders.

His suggestion in 1913 that the cooperative movement ally itself in the political field with other working class organizations resulted in the crystallization of the movement's political program. As early as 1907 Maxwell advocated the establishment of an International Cooperative Wholesale Society along the lines of that which is now engaged in its preliminary operations. He was a convinced free trader and an advocate of international peace.

JAMES A. FLANAGAN

Important work: *History of Co-operation in Scotland* (Glasgow 1910).

Consult: "Sir William Maxwell's Strenuous Life" in *Co-operative News* (February 16, 1929) p. 2, 5.

MAYER, MAX ERNST (1875–1923), German jurist. Mayer, the son of a wealthy Jewish industrial family, was born in Mannheim. As a student of philosophy and law at various German universities he was influenced particularly by Kuno Fischer, Windelband and Georg Jellinek. He taught criminal law and the philosophy of law at the University of Strasbourg and advanced to the rank of professor. During the World War he was active as a jurist in military tribunals and subsequently accepted a chair in Frankfort, where he died before reaching the age of fifty.

Mayer was one of the most striking personalities in recent German jurisprudence, combining two attributes seldom found in harmonious association. He was a brilliant and remarkably acute theorist and at the same time was endowed with true philosophical judgment. Both of these characteristics were exhibited in his two early writings on culpability, where he defined the culpable act as an action of the will that is contrary to duty and is followed by unlawful consequence. With this definition he laid the basis for his first large monograph, *Rechtsnormen und Kulturnormen* (Breslau 1903), which dealt essentially with problems in the philosophy of law. In this work he modified the thesis of Binding, who had stated that delinquent action contravened not the penal law but the customary law norm behind the penal law (e.g. the Mosaic commandment Thou shalt not kill). Mayer pointed out that the norm contravened was not legal but cultural. Mayer's purely sociological approach, it may be said, failed to allow for the fact that whenever legal and cultural norms conflict the former always prevail.

Mayer also wrote excellent works of a purely expository nature, especially in the neglected field of military criminal law; a short but fundamental and systematic outline of the latter, *Deutsches Militärstrafrecht* (2 vols., Leipsic 1907), merits special notice. His extensive critical contributions to the reform of German criminal law also deserve mention.

Mayer's first comprehensive work was his text on criminal law, *Lehrbuch des deutschen Strafrechts* (Heidelberg 1915, 2nd ed. 1923), a work which treated only the general doctrines of criminal law and not the specific offenses. Although Mayer endeavored to occupy a middle position in the conflict between the classical and sociological schools, the real emphasis of his doctrine was in agreement with Liszt's point of view. His theory of punishment developed the ultimate demands of the sociologist.

His other major work is his *Rechtsphilosophie* (Berlin 1922). This reflects especially the influence of Windelband's and Rickert's "philosophy of values." Mayer looks upon the law as something objective and rejects the emphasis on the idea of justice because of its subjective implications. He thereby confirms that sociological approach of which he had sketched the methodology in his *Rechtsnormen und Kulturnormen*. Because of the dominance of Kelsen's formalistic trend in German legal thought Mayer's concrete approach has not as yet received the recognition which it deserves, but his work will doubtless exert a great influence when the present tide of formalism begins to ebb.

H. B. GERLAND

Consult: Hippel, R. von, *Deutsches Strafrecht*, vols. i–ii (Berlin 1925–30) vol. i, p. 22–25; Dohna, Alexander, in *Gerichtssaal*, vol. lxiii (1904) 355–58; Gerland, H. B., in *Kritische Vierteljahrschrift für Gesetzgebung und Rechtswissenschaft*, vol. xlvi (1905) 414–55; Salomon, Max, "Die Ueberwindung des Personalismus und Transpersonalismus bei Max Ernst Mayer" in *Archiv für Rechts- und Wirtschaftsphilosophie*, vol. xviii (1924–25) 431–46.

MAYER, OTTO (1846–1924), German jurist. Mayer, who was born in Fürth in Bavaria, studied at the universities of Erlangen, Heidelberg and Berlin between 1865 and 1868 and in 1871 became a magistrate in his native town. Following a short career as an attorney he became in 1881 *Privatdozent* in French civil law and international private law at Strasbourg, attaining the rank of professor in 1882. From 1903 until 1918, when he became emeritus, he was professor in Leipsic. To a considerable extent the rise of administrative law as a juristic conceptual science is due to Mayer, whose work made a scientific system out of what was previously a mere collection of precepts. Laband had prepared its way by introducing the idea of public law as a pure legal discipline; and a growing acquaintance, as a result of political developments, with French administrative organization furnished the immediate stimulus. Mayer's acquaintance with the conceptual world of Roman, French and German law qualified him particularly to elaborate a new and independent theory. His readings in administrative law, a subject then largely ignored, resulted in his two major works, one on French administrative law, *Theorie des französischen Verwaltungsrechts* (Strasbourg 1886), and the other on German administrative law, *Deutsches Verwaltungsrecht* (2 vols., Leipsic 1895–96; 3rd ed. Munich 1924). In the

first work he sought to interpret the often only implicit content of French administrative law to German jurists and in the second to apply his theoretical deductions to German conditions. The so-called doctrine of administrative law then dominant in Germany contented itself with a textbooklike classification of material according to ends and means, a treatment quite inadequate from a juristic point of view. Administrative law must have its general conceptual side, and this Mayer brilliantly developed. He opposed the private law interpretation of public legal relations, and since his time private and public law have been universally separated. The formation of the Weimar republic interrupted Mayer in his work on Saxon public law and on a theory deriving from Max von Seydel as to the legal nature of the German Empire as a league of sovereigns.

JOHANNES BÄRMANN

Consult: Wittmayer, Leo, "Otto Mayers Lebenswerk" in *Grünhuts Zeitschrift fur das Privat- und öffentliche Recht der Gegenwart*, vol. xlii (1916) 517–34; Bühler, Ottmar, "Otto Mayers Deutsches Verwaltungsrecht (Zweite Auflage)" in *Verwaltungsarchiv*, vol. xxvii (1919) 283–313; Kaufmann, E., in *Verwaltungsarchiv*, vol. xxx (1925) 377–402; Jellinek, Walter, *Verwaltungsrecht*, Enzyklopädie der Rechts- und Staatswissenschaft, vol. xxv (Berlin 1928) p. 97–102, and further references there cited. A self-portrait of Mayer is to be found in *Die Rechtswissenschaft der Gegenwart in Selbstdarstellungen*, ed. by Hans Planitz, 3 vols. (Leipsic 1924–29) vol. i, p. 153–76.

MAYO-SMITH, RICHMOND (1854–1901), American statistician and social scientist. Mayo-Smith came under the influence of J. W. Burgess at Amherst and subsequently spent two years in graduate study at the universities of Heidelberg and Berlin. Upon his return to the United States in 1877 he became tutor in history at Columbia University and in 1880 was one of the five original members of the Columbia Faculty of Political Science. In the same year he gave the first course in statistics offered in any American university. Through the influence of this course, which he continued to give for twenty years, and through his pioneer textbooks in statistics he made important contributions to the development in the United States of the quantitative approach in the social sciences and to the teaching of statistics in American universities. He held that sociologists had exaggerated the complexity of social phenomena as compared to natural phenomena and had added to the difficulties of their science by indiscriminate collection of data and by the application of an artificial terminology based largely on biological analogies; he argued that they should rather be content to seek simple relations of cause and effect, of coexistence and sequence, in social phenomena. In his widely quoted book on immigration he urged the control of immigration to exclude defectives, delinquents and immigrants possessing traits which may prove incompatible with American civilization; believing that the quantity of the current immigration threatened the political institutions of the United States and promoted economic disturbances he advocated also a cautious limitation of numbers.

GEORGE A. LUNDBERG

Important works: *Statistics and Economics*, American Economic Association, Monographs, vol. iii, nos. 4–5 (Baltimore 1888), reprinted as vol. ii of *Science of Statistics*, 2 vols. (New York 1895–99); *Statistics and Sociology* (New York 1895), constituting vol. i of *Science of Statistics; Emigration and Immigration* (New York 1890); a complete bibliography is found in Columbia University, Faculty of Political Science, *Bibliography, 1880–1930* (New York 1931) p. 8–10.

Consult: Seligman, E. R. A., "Biographical Memoir, Richmond Mayo-Smith" in National Academy of Sciences, *Memoirs*, vol. xvii (1924) 71–77, and "Richmond Mayo-Smith" in *Columbia University Quarterly*, vol. iv (1901–02) 40–45.

MAYR, GEORG VON (1841–1925), German statistician and sociologist. Mayr was appointed *Privatdozent* at the University of Munich in 1866 and was at the same time assistant to Hermann, head of the Bavarian Statistical Bureau. After Hermann's death he succeeded him and directed the bureau until 1879. During this period he greatly improved the methods of collection, preparation and publication of statistical data. He centralized Bavarian statistics in his bureau, introduced calculation by means of census cards in place of the stroke system, combined the publication of statistical material with a thorough scientific examination of the results and appended graphic descriptions to the textual discussions. In the 1870's as member of the commission for the further development of the statistics of the German Zollverein he was of decisive aid in the organization of the imperial statistics. From the end of 1879 to 1887 he was in Alsace-Lorraine as undersecretary of state in the department of financial administration. In 1891 he reentered the academic profession at the University of Strasbourg and from 1898 until his death was professor of statistics, finance and economics at the University of Munich. From this period dates his great work, *Statistik und Gesellschaftslehre*, of which the following

parts appeared: *Theoretische Statistik* (Freiburg i. Br. 1895, 2nd ed. 1914); *Bevölkerungsstatistik* (Freiburg i. Br. 1897; 2nd ed., 3 vols., Tübingen 1922–26); *Moralstatistik* (Tübingen 1909–17). From 1890 he edited the *Allgemeines statistisches Archiv*, of which seven volumes appeared under his direction up to 1906. In his contributions to this publication he treated primarily problems of economic statistics. His "Begriff und Gliederung der Staatswissenschaften" (in *Festgaben für Albert Schäffle*, Tübingen 1901; 4th ed. 1921, p. 325–90) attracted wide attention chiefly because of its thorough attempt at systematizing social sciences.

Mayr conceived of statistics as an independent science which has for its object the quantitative study of social phenomena based on mass observations with a view to discovering laws operating in social life. The theoretical part of statistics deals with the scientific basis as well as with problems of method and technique; the practical part treats of the positive results of statistical investigation in the various fields of social mass phenomena. While the epistemological basis of his work, particularly his doctrine of the statistical laws, has been subjected to severe criticism, his treatment of the particular branches of practical statistics remains essentially undisputed. Thus in his population statistics he perceived and elaborated without any use of mathematical tools almost all the problems which claim the interest of population theorists today. His general concept of *Moralstatistik*, under which he included statistics of divorce, suicide and crime, has often been attacked, but here too his treatment of the particular problems remains standard. Mayr also published numerous articles on taxation in Stengel's *Wörterbuch des deutschen Verwaltungsrechts* (2 vols., Freiburg i. Br. 1889–90).

RUDOLF MEERWARTH

Works: For an extensive list of Mayr's publications see article in *Handwörterbuch der Staatswissenschaften*, vol. viii (4th ed. Jena 1928) p. 1241–42.

Consult: Zahn, Friedrich, in *Allgemeines statistisches Archiv*, vol. xv (1925) 1–6; Bavaria, K. Statistisches Landesamt, *Geschichte der neueren bayerischen Statistik*, Beiträge zur Statistik des Königreichs Bayern, no. 86 (Munich 1914) p. 118–39.

MAZARIN, JULES (Mazzarini, Giulio) (1602–61), statesman of France. Mazarin, whose father was a Sicilian, was born in the Abruzzi, studied in Spain and entered the military and diplomatic service of the Roman Curia. Without ever taking orders as priest he advanced from the rank of canon of St. John Lateran to nuncio at the French court and finally in 1641, at the instance of the French king, to the cardinalate. Through Richelieu, who was impressed by his diplomatic ability, he entered the diplomatic service of France and after Richelieu's death in 1642 became prime minister, a post which he continued to occupy during the regency following the death of Louis XIII in 1643. That he managed to control the government until his death despite the resistance offered by the bourgeoisie, the *parlements* and the nobility is to be explained by his intimacy with the regent, Anne of Austria, to whom he was probably secretly married. The sole interruption in his control occurred in 1651–52, when the revolt of the *Fronde*, which was occasioned by his deplorable financial administration, forced him into a year's exile.

Mazarin's principal achievements were in the realm of foreign policy. Carrying Richelieu's policy to its logical conclusion he succeeded by the Peace of Westphalia of 1648 in obtaining a kind of permanent protectorate over Germany for France and its allies, particularly Sweden; the peace effectively crushed the efforts of the Hapsburgs to achieve unity and supremacy and upheld the authority of the princes and the balance between the opposing religions in Germany. France's concrete gain from the peace was Alsace or more precisely a number of vague rights making possible the gradual acquisition of that province. In 1657 Mazarin further increased French influence in Germany by establishing the League of the Rhine, of which France became the mediating power, among the Rhenish archbishop electors and their neighbors. The peace had failed to conclude the war with Spain begun in 1635, and since 1648 France had been unable to rely on the support of the United Provinces against its enemy. But Mazarin's political realism and diplomatic skill enabled him in 1657 to win a new ally in Oliver Cromwell, despite the fact that the French king was the nephew of Charles I. As a result of this alliance he succeeded in imposing the Peace of the Pyrenees upon Spain in 1659. By the treaty he arranged a marriage between Louis XIV and the Spanish infanta Maria Theresa, although in so doing he had to thwart the love of his own niece for the king. In the conflicts between the Baltic states—Sweden, Denmark, Poland and Brandenburg—he played the role of peacemaker, causing France to guarantee the treaties of Oliva and Copenhagen in 1660.

Mazarin's policy led to the triumph of peace

on the basis of the preponderance of France on the continent. In this respect it may be characterized as a continuation of the policy of Henry IV and of Richelieu. But while his predecessors had been guided by a French sense of moderation, Mazarin, a foreigner and a political virtuoso rather than a servant of the nation, included two dangerous items in his legacy to Louis XIV: a covetous attitude toward German soil as a field for French territorial expansion and certain ambiguous clauses in the infanta's contract which eventually led Louis XIV to advance his claim to the Spanish succession. Mazarin attained great wealth during his ministry and became an enlightened patron of the arts, a Maecenas of literature. Toward the French Protestants he adopted a discreet and cautious attitude, which prevented religious bigotry from resulting in open disputes. Mazarin's letters have been published in the *Collection de documents inédits sur l'histoire de France* (9 vols., Paris 1872–1906).

HENRI HAUSER

Consult: Chéruel, P. A., *Histoire de France pendant la minorité de Louis XIV*, 4 vols. (Paris 1879–80), and *Histoire de France sous le ministère de Mazarin, 1651–1661*, 3 vols. (Paris 1882); Lavisse, Ernest, *Histoire de France depuis les origines jusqu'à la Révolution*, vol. vii (Paris 1906) pt. i, p. 1–117; Robiquet, Paul, *Le coeur d'une reine* (Paris 1912); Overmann, Alfred, *Die Abtretung des Elsass an Frankreich im westfälischen Frieden* (Karlsruhe 1905); Silvagni, Umberto, *Il cardinal Mazzarino* (Turin 1928).

MAŽURANIĆ, VLADIMIR (1845–1928), Croatian legal historian. Mažuranić came of a family which had achieved prominence in statesmanship, scholarship and literature. After studying law at Vienna and Zagreb he was for forty-five years active in public service in Croatia as judge, as state attorney and finally from 1895 as vice president and later president of the Ban's Court, the highest court in the country. When Bosnia was occupied in 1875, he was appointed civil commissioner attached to the commander in chief and in that capacity applied himself to the reform of socio-political and feudal agrarian conditions in Bosnia and later to the organization and legal regulation of the old Croatian zadruga.

As a young man Mažuranić had written poetry, literary history and criticism; from the 1880's he began to devote himself to the legal history of the south Slavs. In 1902 in *O rječniku pravnoga nazivlja hrvatskoga* (On a dictionary of Croatian legal terms) he explained the need for and the plan of his great life work, *Prinosi za hrvatski pravno-povjestni rječnik* (A dictionary of Croatian legal history), which appeared during the years 1908 to 1923 and which won him international renown. It was intended to contain all expressions, in published and unpublished Croatian legal records, legal writings and the vernacular, used or still in use to designate juristic persons, objects of actions at law, secular and spiritual callings, public, tribal, communal and family relationships. Such expressions were to be explained in terms of legal history, involving the use of the comparative or parallel laws of kindred peoples; and the explanation was also to contain the phrases used in the original sources. The monumental work lived up to its program. On the basis of a comprehensive knowledge of the legal history of the south Slavs, particularly that of the Croatians, and after investigation of available sources, an immense number of historical, political and legal topics and problems were thoroughly worked up by the comparative method. An abundance of verbal, theoretical and factual detail was drawn from philology, law and national and universal history concerning meanings, explanations and relationships. Mažuranić's dictionary supplied the thousand-year old Croatian constitutional law with its own proper and original documentation, while the establishment of a solid foundation for southern Slavonic legal history gave an enduring impetus to further research in that field. During the last years of his life Mažuranić investigated an interesting but little known subject—the relations of the Balkan Slavs, especially the Croatians on the Adriatic, to the Islamic world and the political, social and cultural significance and influence of a group of south Slavs at the courts and in the provinces of several of the old Islamic states. These studies, the most important of which is *Melek Jaša*, are lucidly condensed in German by Camilla Lucerna in *Südslaven im Dienste des Islams* (*vom X. bis ins* XVI. *Jahrhundert*). Finally two other works by Mažuranić may be mentioned: *Hrvatski pravnopovjesni izvori i naša lijepa književnost* (Source of Croatian legal history and our literature) and *O 'Ligi naroda'* (The League of Nations).

JOSEF MATL

Works: "O rječniku pravnoga nazivlja hrvatskoga" in Jugoslavenska Akademija Znanosti i Umjetnosti, *Rad*, no. 150 (1902) 235–46; *Prinosi za hrvatski pravno-povjestni rječnik*, published by the Jugoslavenska Akademija, 10 vols. (Zagreb 1908–22, and supplement 1923); "Melek Jaša Dubrovčanin u Indiji godine 1480–1528 i njegovi prethodnici u Islamu prije deset

stoljeća" in *Zbornik kralja Tomislava u spomen tisucu godišnjice hrvatskoga kraljevstva* (Zagreb 1925); "Hrvatski pravnopovjesni izvori i naša lijepa književnost," and "O 'Ligi naroda' " in Jugoslavenska Akademija Znanosti i Umjetnosti, *Ljetopis*, vol. xxvi (1911) 81–146, and vol. xxxiv (1919) 65–82.

Consult: Lovrić, E., in *Mjesečnik*, vol. li (1925) 455–57; Andrassy, J., *Tragom Vladimira Mažuranića* (The work of Vladimir Mažuranić) (Zagreb 1928); Lucerna, C., in *Südslaven im Dienste des Islams* (Zagreb 1928) p. 3–5; Schmid, H. F., in *Zeitschrift der Savigny-Stiftung für Rechtsgeschichte, Germanistische Abteilung*, vol. xlviii (1928) 667.

MAZZINI, GIUSEPPE (1805–72), Italian patriot and political and social thinker. In his birthplace, Genoa, in France, where he organized young Italy in 1832, in Switzerland from 1834 to 1836 and in England, where he lived except for brief intervals from 1837, Mazzini wrote and worked for forty years in behalf of Italian political unification, to be accomplished by revolution and the creation of a republic based on universal suffrage. By summoning the lower classes to the struggle for the achievement of national unity, he sought to evoke the full force of the Italian nation, emancipating the patriotic movement from dependence on princes or privileged groups and on foreign intervention. At the same time Mazzini preached a new religious revelation. Influenced by the French romantics and by the Saint-Simonians, he reacted against the rationalistic and individualistic elements in eighteenth century thought; but from Rousseau he absorbed the principles of democracy and from Condorcet the doctrine of the indefinite progress of mankind, while inheriting from the Italian patriots the aspiration toward Italian political unity. Thus he developed an essentially intuitive view of divinely guided historical evolution, progressing through stages each marked by the revelation of a fragment of truth. Mankind was now approaching a new stage, designated by Mazzini as the "social epoch." Like its predecessors this epoch would be inspired by a new religion which should supersede obsolete Christianity. In the coming social epoch, mankind would be reorganized according to the principle of association. Since association required individual freedom and political equality, all nations would adopt a democratic and republican form of government. Freedom and equality were conceived, however, not as rights but as instruments necessary to the individual in order that he might perform the duty of participating in the mission of the group. Each nationality would form an independent political unit, and all national states would be linked by one single moral law in the association of mankind. As regards the two main concrete obstacles to Italian national unification, Austria and the Papal States, the latter, along with the entire papal institution, would vanish with the acceptance of the new religion, while the heterogeneous Austrian Empire would be dismembered when the Italian revolutionaries called upon the various nationalities imprisoned within it to liberate themselves in accordance with the doctrine that each nationality should form an independent state. Although he criticized Marxism bitterly in later life both for its materialistic philosophical foundation and for its creed of the class war, Mazzini anticipated the natural disappearance of social classes in the epoch of humanity when economic activity would be organized on the basis of association and property identified with the fruit of toil. The basic principles of this doctrine Mazzini expounded particularly in his treatise *Doveri dell'uomo* (1840–43; tr. by E. A. Venturi, London 1862).

Mazzini's religion found adherents among a mere handful of people, chiefly English and many of them women. The workers' movement begun by his Italian followers in the 1860's under the inspiration of his social doctrines was equally unsuccessful, being swamped by Bakuninism between 1870 and 1880 and thereafter by Marxism. But in the attainment of Italian unification Mazzini's uninterrupted and uncompromising apostolate was a fundamental influence. Despite the failure of his various insurrectionary ventures, his propaganda for political unification and against any federalist solution of the Italian national problem paved the way for the sudden accord of 1859–60, when the monarchist-federalists renounced federalism, the republican-unitarians abandoned republicanism and all the patriotic groups joined in accepting a united Italy under the house of Savoy. His doctrines also provided direct inspiration for nationalist leaders in Poland, Bohemia, Rumania and Jugoslavia and influenced President Wilson in the development of his plan for reorganizing central Europe on a national basis. The political structure of post-war Europe bears more resemblance to the visions of Mazzini than to those of any of his contemporaries.

GAETANO SALVEMINI

Works: *Scritti editi ed inediti*, 18 vols. (Milan and Rome 1861–91); *Scritti editi ed inediti, Edizione nazionale*, vols. i–lx (Imola 1905–31).

Consult: King, Bolton, *Mazzini* (London 1902); Salve-

mini, G., *Mazzini* (4th ed. Florence 1925); Levi, A., *La filosofia politica di Giuseppe Mazzini* (2nd ed. Bologna 1922); Mondolfo, R., *La filosofia politica in Italia nel secolo XIX* (Padua 1924); Zanotti-Bianco, Umberto, *Mazzini* (Milan 1925), with bibliography of works on Mazzini; Vossler, O., *Mazzinis politisches Denken und Wollen*, Historische Zeitschrift, Beiheft, vol. xi (Munich 1927); Rosselli, N., *Mazzini e Bakounine* (Turin 1927); Griffith, G. O., *Mazzini, Prophet of Modern Europe* (London 1932).

MAZZOLA, UGO (1863–99), Italian economist. At a very early age Mazzola received his law degree from the University of Naples, where he had been taught by Antonio Ciccone, a disciple of Francesco Ferrara. In his early twenties he prepared in Germany a very accurate study of German workers' insurance for the Italian government and while there made the acquaintance of Adolf Wagner. Upon his return to Italy he received an appointment to the University of Camerino and in 1887 occupied the chair of public finance at the University of Pavia. After the death of Luigi Cossa in 1896 Mazzola was appointed also to the chair of political economy.

During his brief career Mazzola devoted himself to the theoretical study of public finance. The best of his various essays is *I dati scientifici della finanza pubblica* (Rome 1890). Opposed to the juridical concept of the state to which Sax subscribed, Mazzola accepted in part de Viti de Marco's idea of the state as a "cooperative" and regarded the state's financial activity as a form of cooperation undertaken by the individuals who comprise a national community. According to this conception they cooperate in order to procure for themselves the satisfaction of certain fundamental needs essential to the complete satisfaction of private needs at a cost lower than that which they would have to bear if they acted separately. The reason for the fiscal activity of the state therefore is neither the existence of the state as a person juridically superior to its citizens nor the conflicts between the various parts comprising the collectivity, conflicts which according to de Viti de Marco should be resolved by state action. In Mazzola's conception of private and public needs the relationship is one of coexistence not of succession. He opposed the view that public needs can be taken care of only after private needs or at least the most important of them have been provided for, because for the citizen to satisfy even his most elementary private needs it is necessary that at the same time the principal public needs, such as security, justice and transportation, be satisfied. Mazzola's work is characterized by the absence of dogmatic criteria concerning the functions of the state and their progressive extension. He merely explains the latter as a corollary of natural differences in human needs without expressing any opinion on whether or not such extensions are advantageous.

Also of interest are his chronicles published in the *Giornale degli economisti*, a review owned jointly by Mazzola, de Viti de Marco and Maffeo Pantaleoni between 1890–96 and still being published.

CARLO PAGNI

Works: L'assicurazione degli operai nella scienza e nella legislazione germanica (Rome 1885); *L'imposta progressiva in economia pura e sociale* (Pavia 1895); *La colonizzazione interna in Prussia*, Italy, Ministero di Agricoltura, Industria e Commercio, Direzione Generale dell' Agricoltura, Annali di Agricoltura, no. 224 (Rome 1900).

Consult: Pantaleoni, M., and Cabiati, A., "In morte di Ugo Mazzola" in *Giornale degli economisti*, 2nd ser., vol. xix (1899) 189–204; Griziotti, B., "Primi lineamenti delle dottrine finanziarie in Italia" in Regia Università di Pavia, *Economia politica contemporanea. Saggi di economia e finanza in onore del Prof. Camillo Supino*, Studi nelle Scienze giuridiche e sociali, vols. xiv–xv, 2 vols. (Padua 1930) vol. ii, p. 299–330.

MEAD, GEORGE HERBERT (1863–1931), American philosopher and social psychologist. After studying at Oberlin, at Harvard and in Germany, Mead joined the faculty of the University of Chicago in 1894 and remained there until his death. More brilliant in conversation than in writing, Mead exercised his greatest influence through personal contacts. By means of his rich personality and through his scattered essays he played an important part in the development of American social philosophy.

Although Mead's interests were wide and touched fruitfully the history and significance of science, the role of religion, the basis of politics and the claims of metaphysics, his central preoccupation was with the genesis of the self and the nature of mind. Mead took more seriously than most philosophers the task bequeathed to speculative thinkers by Darwin: the elaboration of a purely natural history of the psyche. He early enunciated the thesis (University of Chicago, *Decennial Publications*, 1st ser., vol. iii, pt. ii, 1903, p. 93) that the psychical is a temporary characteristic of the empirical interaction of organism and environment concomitant with the interruption of that interaction.

He thus set for himself the task of explaining the development of this discontinuous charac-

teristic of a continuing process into a functional mind or self. The essentially active nature of the organism furnishes the basis for this achievement. The capacity of the human organism to play the parts of others (inadequately described, he thought, as imitation) is the basic condition of the genesis of the self. In playing the parts of others we react to our playing as well. When the organism comes to respond to its own role assumptions as it responds to others it has become a self. From roles assumed successively and simultaneously there arises gradually a sort of "generalized other," whose role may also be assumed. One's response to this generalized role is his individual self. This self in its essential tonicity cuts out from the changing environment such objects as befit its needs and thus assimilates reality to its own pattern.

Short of this implied metaphysical thrust Mead furthered the pragmatic attempt to make intelligence both natural and moral by reading from his resolution of the psyche into a socius an optimistic future for social harmony.

T. V. SMITH

Works: *The Philosophy of the Present* (Chicago 1932). Until works now being published appear, Mead's writings are to be found scattered throughout periodicals, especially the *International Journal of Ethics* and the *Journal of Philosophy*.

Consult: Smith, T. V., "The Social Philosophy of George Herbert Mead" in *American Journal of Sociology*, vol. xxxvii (1931–32) 368–85; and "George Herbert Mead and the Philosophy of Philanthropy" in *Social Science Review*, vol. vi (1932) 37–54; Bittner, C. J., "G. H. Mead's Social Concept of the Self" in *Sociology and Social Research*, vol. xvi, no. i (1931–32) 6–22; Dewey, John, "George Herbert Mead" in *Journal of Philosophy*, vol. xxviii, no. 12 (1931) 309–14.

MEAT PACKING AND SLAUGHTERING

HISTORY AND AMERICAN DEVELOPMENTS.....LYNN RAMSAY EDMINSTER
FOREIGN AND INTERNATIONAL ASPECTS.....FRANK M. SURFACE
E. L. THOMAS
SOCIAL ASPECTS.....MYRON W. WATKINS

HISTORY AND AMERICAN DEVELOPMENTS. From earliest times meat has been a leading constituent in the diet of many peoples, but its importance has varied widely. In part this variation has resulted from differences in available supplies, while on the strictly demand side such factors as climate, religious belief, social customs, hygienic ideas, dietary standards and economic and social conditions have been contributory influences. Broadly speaking, religious rites and customs had a much greater effect in earlier times than they do at present, although they are still by no means negligible. Among the more familiar examples are the prohibition by the early Egyptians of the eating of pork as unclean and of cow flesh as sacred; by the Israelites of pork; by the Phoenicians of the meat of cows and hogs; and by the Hindus of cow flesh. In so far as abstention has rested historically on beliefs as to the sacredness of the animal, it has tended to persist to the present time, as in the case of the Hindus. The same is true with regard to religious bans based on the cleanliness of the animal, as in the case of the orthodox Jewish prohibition against the use of pork and its requirements in connection with kosher beef, wherein religious and hygienic considerations are merged. Among many of the orientals, and even in the Occident, religious tabus regarding meat eating still exert a marked influence on the amount and character of meat consumption.

In the western world, however, the consumption of meat by the masses is much greater than in earlier times. This is in part due to the diminished influence of religious bans and restrictions. But in larger measure it has been the result of tremendous advances in the technique of meat production and distribution which have enabled the masses to consume, concurrently with the general rise in their living standards, more and better meat than was previously available to them. It is not commonly known how far the technique of production of meat animals has advanced in modern times. Not only were breeds of meat animals much smaller in antiquity and the Middle Ages, but in general the animals were apt to be thin and scrawny as compared with those which modern methods of feeding have made possible. It was not until the eighteenth century in England and the early nineteenth century in America that scientific breeding of cattle really began; and only in comparatively modern times has the progress in agriculture made possible the production of adequate feed supplies to fatten animals for slaughter on the vast scale which now prevails. Modern scientific breeding and feeding methods have resulted in the earlier maturing of animals and more rapid turnover; these advances have led to much greater efficiency in beef production

from the standpoint both of quantity and of quality. In other branches of animal husbandry progress has been similar.

No less important have been the effects of revolutionary changes in conditions and methods of slaughter and distribution. It was not until a little over a half century ago that the development of artificial refrigeration, coupled with the advent of more rapid means of communication, overcame the serious limitations upon distribution and consumption which had for centuries characterized the meat industry. Except in cases of conflict with religious beliefs, meat in earlier times was regarded as food for the rich. Yet the difficulties of preservation were such in preparing meat for consumption by the upper classes that the culinary art was mainly concerned with disguising the evil taste arising from decomposition. Indeed one of the chief supports of the spice trade of ancient and mediaeval times was the demand for highly flavored sauces and condiments for this purpose. Gradually the development of better methods of preservation made possible more widespread consumption; but apparently consumption by the masses increased very slowly. Thus Dodd (*The Food of London*, p. 38) records that in England, except in the principal towns, as late as the fifteenth century the mass of the people received their chief supply of meat from the feudal barons and the rich monasteries; as there was little winter feeding, the animals were slaughtered in the autumn and put into brine, so that there was a large supply of salt meat for the nobility, while for the people salt fish was the staple winter food. It is certain, however, that long before the advent of refrigeration in the meat trade consumption of cured and salted meats had become fairly general. Nevertheless, the most striking advances have come within the past half century and have coincided broadly with the great scientific and technical progress in meat production and distribution and also with the era of industrialization and urbanization. Not only has the total slaughter increased enormously, but there have likewise been marked increases in consumption in most of the western nations. The statistics for these countries, especially those of several decades ago, are subject to many limitations; but they suffice to show the general trend since the close of the nineteenth century (Table I).

TABLE I

ANNUAL PER CAPITA CONSUMPTION OF MEAT, SELECTED COUNTRIES
(In pounds)

COUNTRY	YEAR OR PERIOD	TOTAL	BEEF AND VEAL	MUTTON AND LAMB	PORK AND LARD*
Argentina†	1899	140.0			
	1912–13	302.2	254.9	32.2	15.1
	1921–25	325.2	274.9	24.5	25.8
	1931	264.9	208.4	21.7	34.8
Australia‡	1902	262.6			
	1909–13	264.2	152.3	97.5	14.4
	1921–25	199.1	116.2	69.0	13.9
	1931	188.5	90.2	83.0	15.3
Belgium	1902	70.0			
	1912	85.8	41.6	2.0	42.2
	1921–25	76.8	43.5	1.0	32.3
	1931	89.1	39.0	1.3	48.8
Canada	1900	109.0	54.0	11.0	44.0
	1910	136.7	60.9	9.1	66.7
	1921–25	157.2	70.8	8.0	78.4
	1931	148.4	57.9	7.0	83.5
France	1904	79.0	43.0	9.0	27.0
	1909–13	105.7	49.2	9.5	47.0
	1921–25	92.7	48.0	6.9	37.8
	1931	100.7	53.0	7.5	40.2
Germany	1904	112.7	40.5	2.4	69.8
	1913	116.0	40.6	2.3	73.1
	1921–25	81.9	31.9	1.8	48.2
	1931	118.7	41.7	1.5	75.5
United Kingdom	1901–05	121.0	58.0	27.0	36.0
	1910–14	124.4	61.3	29.3	33.8
	1921–25	125.9	62.2	24.3	39.4
	1931	137.9	60.7	29.5	47.7
United States	1900	156.0	71.3	6.8	77.9
	1909–13	153.5	73.5	7.3	72.7
	1921–25	156.8	68.3	5.3	83.2
	1931	147.6	56.5	7.1	84.0

*For all countries, except the United States, lard is apparently not included in the earliest per capita figure, but it is included in the later figures. Separate figures for lard consumption in the United States are as follows: 1900, 13.2 pounds; 1909–13, 11.4 pounds; 1921–25, 13.9 pounds; in 1931, 11.4 pounds.

†The figures for 1912–13, 1921–25 and 1931 are for the Federal District of Buenos Aires only.

‡For New South Wales only, except 1902, which is an estimate for all Australia. The more recent figures for the country as a whole are somewhat fragmentary.

Source: The figures for the earliest year given under each country (except the United States) are from United States, Department of Agriculture, "Meat Situation in the United States," *Department Report*, no. 109 (1916) pt. i, p. 272–73. Figures for United States, 1900, and for Belgium, 1931, compiled by United States Bureau of Agricultural Economics. All other figures are from United States, Bureau of Agricultural Economics, *Foreign Crops and Markets* (Jan. 30, 1933) p. 88–91.

For most of the countries listed in the table the figures show distinct increases in per capita consumption since 1900; but if the earliest figure given under each foreign country does not include lard, then the real increase is exaggerated. In some cases correction of this possible error might indicate an actual decrease. In the United

States, for example, where the figures are comparable throughout, it is clear that per capita consumption has not increased but if anything has declined. The substantial gain in pork has been offset by the decline in beef. In Australia and Argentina, as representative of the newer countries, the figures show recent marked declines in consumption as compared with pre-war years. In Canada, however, chiefly because of great increases in pork consumption, the trend has been decidedly upward. It is not unlikely that in these newer surplus countries some of the consumption indicated in the earlier figures was not actual but included waste. In the industrial countries of Europe per capita consumption appears on the whole to have held its own since 1900. The inroads of the war period are reflected in the marked declines in Germany, France and Belgium in 1921–25 as compared with the pre-war years; but in all three all or most of this ground has now been recovered.

In addition there have been decided changes in the character of meat consumed in recent years, which in turn have exerted a marked influence on the livestock industry. Increasingly the demand for roasts and other large cuts has given way to a demand for smaller, more tender types of meat. In the United States the increased per capita consumption of pork, the well sustained per capita consumption of veal and the shift from mutton to lamb and from older to younger beef animals as sources of beef supply, all reflect this trend in some measure. From the standpoint of demand this shift in the type and quality of the meat in popular demand has encouraged the earlier maturing of animals for slaughter, better breeding, more intensive feeding, more rapid turnover of the herds and in general greater efficiency in livestock production. Conversely, however, the conditions of supply themselves have undoubtedly affected the trend of some of these demand factors.

In the United States meat packing dates from early colonial times. At first farmer packers cured and smoked meat for local use; but as the market grew both at home and abroad the industry became more specialized. In Boston and other seaboard cities the "packing" of meat for the growing local population and later for the West Indies, for seagoing vessels and for the plantation trade with the south became the basis of an established slaughtering industry. In the earlier years there was little actual packing, practically all of the meat being smoked or cured. But for the expanding maritime and plantation trade there developed the use of pickled meat, which was barreled or packed. Hence, although the greater part of the meat prepared each year continued to be shipped in bulk, the term packing came to be applied to the entire procedure of preparing various kinds of meat for market.

The development of central slaughtering points was accompanied by the growth of livestock markets or fairs. To these the animals were driven overland from the outlying regions, often for long distances. One of the earliest and most celebrated of such fairs was the Brighton Cattle Market near Boston. As the livestock industry pushed westward after the revolution, these fairs were of great importance in the middle west as local markets where livestock (mainly cattle) was collected and driven over the mountains to the eastern markets by professional drovers. Gradually the fairs declined as the great central marketing and packing centers in the west began to emerge. Of these latter the first was at Cincinnati, and from 1830 to 1865 this city was the most important packing center. As hogs could not be driven long distances overland without great shrinkage, pork packing tended to develop close to the source of live supplies. Hence it was mainly pork packing on which the leadership of Cincinnati (dubbed "Porkopolis") rested, although this city was also an important point for assembling cattle for the eastern trade. Finally, with the opening of the cattle country west of the Mississippi and with the development of rail transportation there came the rise of the great central cash livestock markets and meat packing centers, with Chicago rapidly taking the lead.

Until the development of refrigeration meat packing was a highly seasonal industry. Packing operations could be carried on only in cold weather, and the shortness of the period intervening between the arrival of winter and the stoppage of navigation added greatly to the difficulties of the industry. On the side of technique the contrast with present methods was marked. The first packing plants were little more than general merchandise warehouses, being utilized for packing purposes only in the short cold season and requiring for equipment little more than the large vats in which the pickle was kept. Slaughtering was performed in separate establishments. The first packers were moreover largely commission merchants who packed on farmers' account. By 1850, however, slaughtering and packing were usually combined in the same establishment. Labor was almost entirely by hand, yet practically from the first the divi-

sion of labor reached a high point. There was relatively small utilization of by-products, especially in the earlier period, when the slaughtering was done in small separate establishments; indeed the disposal of the offal led constantly to conflicts with the public authorities concerning sanitation.

The early financing of the packing industry presented great difficulties, chiefly because of the long delay, usually from two to eight months, between the purchase of the live animals (which constituted from one half to four fifths the value of the finished product) and the sale of the meat. Large sums of cash were therefore required; indeed the power to command adequate supplies of money was an important factor in Cincinnati's early ascendancy. At first, when packers were mainly commission merchants for the farmers, little cash was needed; but as outright purchase developed the situation changed. From the beginning the western packers were compelled to rely heavily on eastern capital, and for such advances the terms were apt to be onerous by virtue of the highly speculative character of the industry. Prices varied widely between markets; estimates of the probable receipts of animals in a particular market were subject to considerable error; and the length of time likely to be required to dispose of the finished product as well as the price was extremely uncertain. Moreover the packers were chiefly men of small means and limited experience in the ways of finance. But as the leadership passed to Chicago, men of wider experience and better eastern connections came to predominate and the industry took on decided aspects of stability.

The turning point in the history of American meat packing came in the decades immediately following the Civil War, largely as the result of two factors. The first was the rapid growth of the railroads. The extension of rail transportation into the country beyond the Mississippi provided an impetus to the rapid development of the range livestock industry and made possible a heavy flow of stock, especially cattle, to Chicago and other centers. The second factor which revolutionized the entire industry was the advent of refrigeration and refrigerator cars, which transformed meat packing from a seasonal enterprise serving chiefly the needs of local communities into a year round industry located near the centers of livestock production and capable of shipping its products long distances.

Two groups of men were prominent in the development of the industry after the Civil War. The first, consisting of persons who had had experience in the European packing industry and whose plants were originally established chiefly to engage in the export trade, included W. P. Sinclair, Samuel Kingan and Jacob Dold. The second, made up chiefly of men whose packing business originated in the middle west, included P. D. Armour, G. H. Hammond, Nelson Morris, G. F. Swift and Michael Cudahy. Morris had begun his packing operations in Chicago in 1859; Armour, moving from Milwaukee, appeared in Chicago in 1868; Hammond's rise dated from 1869 and Swift's from 1875. Swift, however, had earlier built up a packing business in the east. In 1887 Cudahy, for many years associated with Armour, began to operate an independent plant at Omaha. These names have ever since been closely linked with the industry.

The growth of packing after the 1880's was greatly accelerated by the development of the dressed beef trade. In 1868 Hammond had made some winter shipments of dressed beef to eastern markets; but it was not until 1875 that artificial refrigeration came to be used successfully. First Swift and Hammond, then Armour and soon others began to develop the refrigerated beef trade, which by 1880 had attained an appreciable volume. Its distinct economies as compared with the cost of shipping live animals (the latter involving not only loss of weight in handling but also added costs arising from transporting on the hoof the low valued by-products which made up nearly one half the weight of the animal) tended to hasten the growth of the trade. Nevertheless, because of the opposition of the railroads to this traffic, public prejudice and legal restrictions it was not until 1890 that the trade became securely established. With it had come an entirely new kind of distributing organization, based on branch houses and "peddler car" routes, the latter being employed to distribute fresh meat at smaller points along the railways directly from the refrigerator cars to any who wished to buy. The year 1890 likewise saw the inauguration of a federal meat inspection service. By this time also progress was being made in the introduction of chemical control in the packing industry, making possible much more extensive utilization of by-products, better standards of quality and similar developments.

The combination of factors to which reference has been made early gave Chicago an ascendancy in the packing industry which it has never re-

linquished. But the development of the trade in fresh meats encouraged the extension of the industry into other parts of the west located still nearer to the centers of livestock production. Plants were established in St. Louis, Kansas City, Omaha, St. Joseph, Sioux City, St. Paul and other cities, many of them as branches of the Chicago houses. In 1890, according to the census, meat packing establishments located in five cities—Chicago, Kansas City, Omaha, St. Joseph and St. Louis—accounted for 69 percent of the total domestic cattle slaughtered, 49 percent of the hogs and 52 percent of the sheep. Chicago alone contributed 30 percent of the cattle slaughter, 23 percent of the hogs and 30 percent of the sheep. In 1904, according to the census, about three fourths of the slaughtering in the United States was done in the middle west, 60 percent being handled at the few large packing centers in the area. Six large companies had emerged—Swift and Company, Armour and Company, Nelson Morris and Company (later Morris and Company), Cudahy Packing Company, Schwarzschild and Sulzberger Company (later Sulzberger and Sons and after 1916 Wilson and Company, Inc.) and the National Packing Company. The first five of these later came to be known as the Big Five; the last named was actually controlled by Swift, Armour and Morris.

As has been pointed out the process of concentration in the meat packing industry was rapid beginning with the 1890's, the chief influence in this direction being the advent of refrigeration. Distribution on a national and even on an international scale led to still more intensive concentration; it required a large amount of capital, since it involved elaborate marketing organization and equipment, including the establishment of branch warehouses in the larger cities and ownership of lines of refrigerator cars. Moreover there were marked advantages in large scale organization from the standpoint of the profitable utilization of by-products. Especially did these conditions favor concentration of control in respect to beef, partly because of the larger sales machinery required in marketing fresh beef and partly because the thorough utilization of by-products, which constituted some 45 percent of the live weight of cattle as against 25 percent of that of hogs, was possible only when the process was conducted on an elaborate scale.

The World War gave great impetus to packing. The heavy demand for canned and cured beef and pork products to feed the armies of the United States and the Allies led to a marked expansion in both the livestock and the packing industries. As a result of wartime difficulties of communication with South America and Australia much of the demand centered in the United States. Thus from a few million pounds before the war American beef exports including beef products rose to 782,000,000 pounds in 1918, while pork products exports rose to 2,250,000,000 pounds in 1918 and to 2,638,000,000 in 1919. Thus the rates of earning in the industry during the war period were virtually trebled.

Detailed information concerning profits in the packing industry through the years of the World War was published by the Federal Trade Commission in 1920. Figures for the Big Five, ascertainable for varying periods of their history (for Armour and Cudahy from their founding in 1868 and 1887 respectively; for Swift from 1896 with partial data from 1885; for Wilson from 1894; and for Morris from 1909), indicated a net aggregate profit, for the group, of $504,298,000, out of which dividends and drawings of $163,013,000 were paid, leaving $341,285,000 for reinvestment in the industry, with only $126,638,000 of new cash capital subscribed. From 1912 to 1917 inclusive the annual rates of net profit of the Big Five (after deduction of interest as an expense) as based on net worth (capital stock and surplus) were as follows: 1912, 8.1 percent; 1913, 7.0 percent; 1914, 8.3 percent; 1915, 12.8 percent; 1916, 18.5 percent; 1917, 26.5 percent; in 1918 the reported rate of profit on net worth to the United States Food Administration was 15.0 percent. The huge increase in livestock and meat production during the war had led to such serious overexpansion that heavy losses were suffered during the postwar recession of demand and prices. For the fiscal year 1921 alone these were alleged by the packers to have been over $61,000,000, of which Armour's loss was placed at nearly $32,000,000. The 1920's therefore saw widespread financial reorganization and consolidation in the whole industry, the reorganization of Armour and Company (including the Armour-Morris merger in 1923) and of Wilson and Company, Inc., being outstanding developments. A summary view of the evolution of the industry since 1869 is offered in Table II.

Despite the great increase in interstate packing during recent decades a very considerable part of the total amount of meat slaughtered in the United States still consists of local and farm killings. Although its precise size cannot be de-

TABLE II

MEAT PACKING INDUSTRY IN THE UNITED STATES, 1869 1931*

YEAR	NUMBER OF ESTABLISHMENTS	WAGE EARNERS†	WAGES	COST OF MATERIALS, CONTAINERS FOR PRODUCTS, FUEL AND PURCHASED ELECTRICAL ENERGY	VALUE OF PRODUCTS	VALUE ADDED BY MANUFACTURE
				In millions of dollars		
1869	768	8,366	2.6	61.9	75.8	14.2
1879	872	27,297	10.5	267.7	303.6	35.8
1889	1118	43,975	24.3	481.0	561.6	80.6
1899	882	68,386	33.4	682.1	783.8	101.7
1904	929	74,134	40.3	805.9	913.9	108.1
1909	1221	87,813	50.4	1191.4	1355.5	164.1
1914	1279	98,832	62.1	1441.7	1652.0	210 3
1919	1304	160,996	209.5	3782.9	4246.3	463.4
1921	1184	117,042	152.9	1868.2	2200.9	332.7
1923	1397	132,792	167.6	2176.0	2585.8	409.8
1925	1269	120,422	159.4	2625.2	3050.3	425.1
1927	1250	119,095	161.6	2663.7	3057.2	393.5
1929	1277	122,505	165.9	2974.1	3434.6	460.5
1931‡	1209	106,594	134.4	1837.6	2177.2	339.7

*Data for establishments with products under $5000 in value included for 1919 and prior years but not for 1921 and subsequent years. The data for 1889 and previous years are not strictly comparable to those of 1899 and subsequent years because of changes in classification.
†Average for the year.
‡Preliminary.
Source: United States, Bureau of the Census, *Biennial Census of Manufactures, 1921* (1924); Manufactures: 1929, Industry series, *Meat Packing and Related Industries* (1931); Manufactures: 1931, *Meat Packing, Wholesale (Preliminary Report)* (1932).

termined, official estimates in 1931 placed the meat output not subject to federal inspection at 5,729,000,000 pounds out of an estimated total from all slaughter operations of 16,777,000,000 pounds. There is, however, a large amount of federally inspected meat which by its very nature tends to foster a considerable measure of geographic decentralization in packing. Nearly half the beef consumed in New York City and vicinity, for example, is derived from animals slaughtered locally for the kosher, or orthodox Jewish, trade. Since consumption within three days after slaughter is one of the religious requirements, the killing must be done locally and under the supervision of the rabbinical authorities. Only the fore quarters of the animal are kosher; but the remainder is available for the non-Jewish demand. The same factor accounts for a certain amount of local slaughtering in other cities in the east.

Another factor which tends to prevent complete concentration in the great packing centers is freight and marketing costs. Savings in freight rates, both on live animals and meat products, have always made it possible for the so-called local, independent packers to compete with the big packers within limited areas. In recent years, because of low prices of livestock on the one hand and the continuance of high freight and marketing costs on the other, the growth of small packing plants scattered throughout the territory beyond the Mississippi has been perhaps the most striking development in the entire industry. In pork and lamb and even in beef slaughtering in the great packing centers has suffered a relative decline. This development, however, appears to have represented a tendency toward decentralization of operation rather than of ownership. A number of local plants throughout the region between the Mississippi and Missouri rivers have been acquired by the big national packing firms, which now slaughter locally much livestock which would formerly have been slaughtered in their large city plants. Careful inquiry has revealed that the percentage of livestock slaughtered in plants owned by the large national packers has not actually been declining.

It is to be noted despite these considerations that there is much greater geographic concentration in the United States than in Europe. In European countries most of the slaughtering is in smaller establishments and much of it in public abattoirs. In England and Wales alone, for example, there are over 20,000 privately owned local slaughterhouses, although in the larger cities there are also public abattoirs. In Germany and France commercial slaughter takes place almost entirely in public abattoirs. In Denmark bacon factories are cooperatively

owned by the farmers. In Australia and especially in New Zealand public abattoirs or meat works and public stockyards predominate. In both countries also slaughtering on farmers' account is widely prevalent.

In its economic characteristics the American packing industry presents a number of striking features. Essentially the packer is not engaged in production but in distribution, for by far the greater part of the value of his product is the cost of his raw material, or livestock. More than half the large packer's expenses are for freight and selling, and receipts from by-products alone largely offset the total cost of slaughter and distribution. The plant operations may therefore be looked upon simply as processes preparatory to the distribution of meat and by-products in a more economical way than that afforded by the earlier method of sending the live animals to the consuming centers. Again, the nature of the packer's operations presents many cost accounting complexities. Like the flour miller and the oil refiner, the packer is engaged in "disassembling," as it were, a raw product; and from the time this process starts until the final disposal of its many parts to the ultimate consumer the problem of allocation of costs among the different products is constantly present. In beef packing it is largely one of major versus by-product costs; in pork packing it is mainly one of joint costs. The possibilities offered for concealment of profit through the particular accounting practises adopted under these complicated conditions have been a subject of no little controversy between the packers and the public authorities. Finally, it is worth remembering that much of the product of the industry is highly perishable.

The character and relative importance of the numerous products derived from the live animal present many variations. The dressed yield of beef averages 55 percent of the live weight; in the case of pork it is 75 percent, in that of lamb, 48 percent. Some beef is canned, but the overwhelming portion is sold fresh. About 40 percent of the pork and virtually all of the lamb are sold fresh. Fresh meat must be chilled to a low temperature for distribution; but because of the popular distaste for frozen meat in the United States very little of it is treated in this fashion. In Europe, on the other hand, large quantities of frozen meat from overseas are consumed.

The by-products of the industry fall broadly into two groups: the edible and the inedible. The edible products include hearts, livers, brains, tongues and the like; and also lard, oleo oil and oleo stock, stearin, edible tallow and other edible fats. The inedible products include hides and skins, pulled wool, products from the sinews, fats, blood, products from glands and viscera, products from bones and pharmaceutical products. The main by-product lines or outlets are leather, brushes, oleomargarine, soap, sausage casings, strings, ligatures, glue, gelatin, animal and poultry feeds, commercial fertilizers and pharmaceuticals. According to R. A. Clemen (*By-products in the Packing Industry*, p. 9), the proportion of income from by-products varies as follows: from hogs 3.4 percent; from sheep 18.6 percent, of which 14.5 percent is from the pelt alone; from calves 7.2 percent; and from steers 12.7 percent, of which 8.6 percent is from the hide.

The technical advance of the industry since the latter part of the nineteenth century has been rapid. The modern large scale packing and distributing concern is an elaborate and complicated organization. Functionally it is concerned with four main enterprises; namely, slaughtering and packing, the specialized manufacture of by-products, the storage of products and distribution. These functions in turn may include many lines of subordinate or collateral activity. Thus the packing departments, besides slaughtering and preparing the cuts, may be engaged in making sausages and in canning meats. A soap factory may be operated to utilize inedible greases, an oleomargarine factory to utilize edible oils. Packing or merchandising of poultry and dairy products may be taken up as an allied line.

Division of labor is carried to a high point. Many of the workers, such as the cattle butchers, must be highly skilled; but fully two thirds of the operations require only unskilled labor. In some branches of the industry, as in the trimming and sausage rooms and in the cooking and canning departments, women are employed as well as men. The average earnings per hour of males in all occupations in the industry increased from 27.1 cents in 1917 to 51.1 cents in 1921, dropped to 49.9 cents in 1923 and then increased gradually from year to year until 52.5 cents was reached in 1929. Women's earnings have been considerably lower. In 1917 the average wage per hour for women was 17.8 cents; it reached 36.5 cents in 1921, fell to 36.1 cents in 1923 and to 35.9 cents in 1925 and then mounted to 36.9 cents in 1929. The spread in earnings, based on operations performed, may be noted from the following comparative data. In 1929 average earnings per hour of males (exclusive of

doormen, bricklayers and masons) ranged from 42.7 cents for truckers in the fresh pork cutting department to 88.2 cents for floormen or siders in the cattle killing department; for females the range was from 31.1 cents for cap setters in the canning department to 42.9 cents for workers in the offal department. The average full time hours per week of males and females in all occupations increased from 48.4 in 1921 to 52.3 in 1923 and decreased gradually from year to year to 49.2 hours per week in 1929.

Despite the technical advances achieved seasonal employment is still a prime characteristic of the industry. In the words of Dr. Herbst (*The Negro in the Slaughtering and Meat-Packing in Chicago*, p. 10): "Throughout 'Packingtown' the busiest season is about the last week in November, during December, or early January. Lay-offs begin then and the depression lasts through the summer months. Ordinarily in July or August the run of livestock picks up. Workers who have been transferred to other departments are then restored to their original positions and wage-earners are taken on until the peak of employment is again reached. Although the magnitude of variation between these periods of high and low employment has been lessened, they have not been eliminated and recur annually." While in recent years the packers have been guaranteeing pay for 40 hours in any one week to those who are kept on the pay roll, in actual practise but few workers enjoy this modicum of regularity; these are the trained operators, who procure jobs during the slack season by interdepartmental transfers. As for the common laborers, they have come to regard periodic layoffs as a condition of employment in meat packing and slaughtering.

As in other industries, labor productivity in meat packing increased markedly during the period 1914–31 as a result of elimination of waste motion, change of layout rendering unnecessary the transfer of the product from one part of the plant to another during processing, combination of two jobs and adoption of workers' incentive plans. In a study made by the United States Bureau of Labor Statistics of certain departments of three large establishments, employing in 1931 an average of 2072 men, it was found that from 1914 to 1931 productivity per man hour had increased 5.7 percent in the cattle killing department, 33.2 percent in the hog killing department, 21.1 percent in the hog cutting department, 41.6 percent in the calf killing department and 61.0 percent in the sheep killing department. There was naturally a corresponding loss in employment opportunities. It would have required 2585 men working at the 1914 rate of productivity to do the jobs performed in 1931 by 2072 workers; this represented a loss of 513 full time jobs, or 19.8 percent.

LYNN RAMSAY EDMINSTER

FOREIGN AND INTERNATIONAL ASPECTS. In Argentina although the first shipments to Europe of frozen beef occurred as early as 1877 meat packing was not commercialized until the beginning of the present century, when British capital was attracted to it. This was largely because improvements in methods of refrigeration made it possible to keep meat in edible condition during the long voyage to European markets. British owned *frigoríficos* (refrigerated packing houses) met no serious competition until the advent of American packers in 1908; within a short time the four leading American firms (Swift and Company, Armour and Company, Morris and Company and Sulzberger and Sons Company) owned plants in Argentina. Thanks to the payment by the packers of price premiums for animals of superior quality *criolla*, or native, scrub stock was almost entirely eliminated except in those sections which were economically inaccessible to the export *frigoríficos*. Through control of market prices the packers were thus in a position to enforce and to obtain the requirements of their consumption markets. Up to the end of the World War, during which Argentina played an important role in the provisioning of allied troops, producers and packers thrived; but the following period of deflation caused widespread discontent and gave rise to agitation for a government owned packing plant. After 1923 measures were enacted for the establishment of a national *frigorífico*, the fixing of maximum and minimum prices to be paid for cattle by the private *frigorífico* operators and the obligatory purchase of cattle on a live weight basis. The law establishing price control was suspended following the shutting down of the private plants; but the continuance of the depression in the industry has prompted cattle breeders to appeal to the Argentinian government for relief in order to insure higher prices to producers and close governmental supervision of the packing industry. Argentina possesses also an extensive sheep industry, the marketing of the animals being largely in the hands of foreign interests, which are predominantly American.

In Uruguay the development of the packing industry followed a course not unlike that in Argentina, except that foreign capital appeared at a somewhat later date. From 1906 to 1921 year to year operations of the export *frigoríficos* reflected no changes of marked significance. In 1921 slaughterings were more than double the amount in 1920 and afterward they increased annually, until in 1929 they reached the high mark of nearly 1,500,000 head. The plants under foreign control are three in number. A fourth plant, which was native owned, ceased to operate in 1929 and was subsequently acquired by a government owned corporation. Apparently government operation has not been attended by financial success, for early in its career the plant was reported to be losing nearly $2 per head of cattle slaughtered.

Although Brazil has a larger cattle population than Argentina, Brazilian herds have not reached the high standard of Argentinian and Uruguayan cattle and the meat products of that country do not play a prominent part in English and continental markets. There are four American freezing plants in the state of Rio Grande do Sul and two in the state of São Paulo; in São Paulo British interests operate two plants and own extensive ranch properties in two adjoining states for the supply of cattle. On the other hand, no Brazilian company is engaged in the preparation of beef for export.

The existence of a community of interest between Argentina, Uruguay and Brazil led to the calling of a conference at Montevideo in December, 1931, for consideration of common economic problems. Two resolutions were adopted: first, that each country should continue to develop its own commerce in meats but along lines which would permit of common action; and, second, that two delegates be appointed from each country to constitute a joint mission for the study of the foreign trade in meats and to coordinate measures for insuring its protection. At a second meeting of the conference in November, 1932, the decision was reached that each country's quota of chilled beef, as eventually fixed by the British government, should be distributed among the packers by the governments of the respective countries rather than by agreement among themselves.

In Australia prior to 1860 cattle and sheep were killed only in sufficient numbers to supply the limited local demand for fresh meat. Commercialization of the industry began with the opening of meat canneries in the 1860's, and refrigeration was first adopted in 1883 as a medium for placing Australian mutton on the English market. In that year several cargoes of mutton and lamb were shipped to England, and shortly thereafter works were erected for the preparation of frozen meat for export. Plants specializing in beef export are for the most part centered in Queensland, where approximately 50 percent of Australian cattle is located. During the past several years high labor costs, heavy interest on capital investments and oversea transportation expense, resulting in losses to producers and packers alike, have exerted an influence toward the elimination of some of the smaller establishments. Short term leaseholds on grazing land have injected a factor of uncertainty into the cattle industry and prevented many producers from improving herds and properties which logically might have brought more adequate returns. In addition to the eight export plants in Queensland some thirty-five concerns at Brisbane slaughter cattle for the local and state fresh meat trade. Indications at present point to the eventual acquisition by the state of the majority of the latter group of establishments; in fact in 1930 the government carried its intention into partial execution with the purchase of the largest export meat works from Armour and Company. English interests are heavily represented not only in the export meat industry of Queensland and elsewhere in Australia but likewise in steamship lines carrying meat supplies to the English and continental markets. Municipal or state abattoirs are maintained in Adelaide, Melbourne, Sydney and Newcastle. At the present time only one government owned meat works in Western Australia, located at Wyndham, is engaged in the slaughtering of cattle for export. Lack of even rainfall throughout the year, the abundance of ticks, excessive charges on investments, inadequate interior transportation facilities and a vast area of arid land all tend to retard cattle production. A drawback to the development of the export meat industry has been the failure to perfect a reliable system of low temperature refrigeration which would assure satisfactory preservation of chilled beef throughout the long ocean journey to the United Kingdom. Slaughtering of sheep and lambs for export is confined mainly to the states of New South Wales and Victoria. During the fiscal year 1929–30 the number of sheep killed in the former state was nearly 60 percent of the total while a little less than 25 percent of the lambs was prepared in

that state. Victoria in the same year handled about one third of the sheep and two thirds of the lambs.

New Zealand's entry into the meat export trade was simultaneous with that of Australia; prior to that time commercial utilization of the large sheep population of the country was limited, as in the case of Australia, to melting down the tallow derived from the carcasses. Sheep were raised principally for their wool. The comparative importance of the different branches of the export meat industry is indicated by the fact that, in the fiscal year 1928–29, 68 percent of the shipments consisted of whole lamb carcasses, 20 percent of whole mutton carcasses, 6 percent of frozen beef, 3 percent of pork products and 3 percent of potted and preserved meats and sausage casings. The industry is closely controlled by a government agency, the New Zealand Producers' Board, established in 1922; its powers are broad, the chief being the grading of meat, regulation of shipments to insure supplies in accordance with market demands, foreign advertising, the securing of cargo space and supervision of loading operations. In addition a corps of inspectors is maintained in the United Kingdom to exercise surveillance over the discharge of shipments and to check on condition, quality and the like. Sheep and lamb freezing works are located in the port cities. There are no subsidiaries of American packing companies in the dominion; and while English capital is represented, most of the works are owned by citizens of New Zealand.

In Canada the organized meat packing industry, which had been established just a little later than that of the United States, has become the country's second most important industry. In 1930 the value of the capital investment in Canadian meat packing was nearly $61,000,000 and the total kill of food animals under government inspection was very close to 4,000,000 head. The financial success of meat packing in Canada has been due largely to the utilization of by-products; in this sense it has been guided to a very large extent by American packing practises. A Canadian subsidiary of Swift and Company operates plants in all the provinces save Prince Edward Island and Nova Scotia. Canada depends to some extent on its export trade with the United Kingdom, the British West Indies, Newfoundland and the United States for outlets for its surplus meats and animal fats. The bulk of the trade is with the United Kingdom, and exports have quite as diversified a character as those from the United States. The total value of the Canadian output of meats, animal fats and related by-products was in excess of $185,000,000 in 1929, declining 11.8 percent the following year.

The original importation of pedigreed cattle into south Africa in 1870 was the first effort toward the improvement of cattle standards. Since 1910 marked strides have been made in the direction of herd improvement, these advances being concurrent with a realization on the part of farmers of the greater possibilities in better bred stock. For the Union of South Africa as a whole cattle ownership is about evenly divided between European and white farmers on the one hand and natives on the other. Municipal abattoirs are located in such centers as Johannesburg, Durban and Cape Town as well as in the smaller cities of Bloemfontein, Pretoria, Germiston and Pietermaritzburg. In fact throughout the union most of the slaughtering of food animals is conducted as a municipal, town or village enterprise. The export meat industry is controlled to a considerable extent by the British owned Imperial Cold Storage Company, which is financially interested in plants at eleven strategic points in the union. The government itself operates two cold storage plants in Cape Town and Durban; these were designed to hold fresh meat supplies for local consumption, but occasionally they store meats intended for shipment overseas. American packing interests are not represented in the Union of South Africa. Until recently the various operators of cold storage plants and the one outstanding firm in particular have confined their export activities to the filling of government contracts with Mediterranean countries, notably Italy. Only since 1931 has attention been directed toward the development of an organized meat export industry. One of the chief reasons for this neglect has been the recognition of a growing preference on the part of European consumers, especially in England, for chilled rather than frozen meat. Pending further advances in refrigeration South Africa's distance from the major consuming markets of Europe places the union under a handicap in this respect. The government in 1923 passed a beef export bounties act authorizing the payment of $1\frac{1}{2}$ pence per pound of beef exported. In the Union of South Africa there are close to 50,000,000 sheep; but since these are principally wool type breeds, slaughter for meat purposes is limited to local market demands.

There is no beef cattle industry in Denmark. The Danish swine industry has been a development concurrent with the expansion of the dairy industry, which is a mainstay of Danish agriculture. In 1931 bacon was the chief meat produced by the 61 cooperative plants and the 22 privately owned slaughterhouses. Seven million hogs were slaughtered in 1931, the cooperative establishments being responsible for 6,100,000 of these. The so-called bacon factories prepare this product for the market by salting the sides after the removal of the head and first joint of the legs. England receives the entire exportation and it is here that the smoking of the bacon for consumption is completed. The Danish cooperative factories first made their appearance in 1887. Less than 11 percent of the bacon and by-products of the cooperative factories is consumed in Denmark. Because of the importance of the export trade therefore 18 factories have combined to sell their bacon to a general agency in London, called the Danish Bacon Company, Ltd. This firm, it is estimated, handles from 30 to 33 percent of all the Danish bacon exported and in turn disposes of the product direct to large retail dealers. The various cooperative plants are organized into an association called the National Federation of the Danish Cooperative Bacon Factories, which serves the mutual interests of the members particularly in matters related to necessary commercial and legislative reforms. The average number of members belonging to this association has been 180,000 individual farmers or from 3500 to 3700 members per factory.

The Soviet Five-Year Plan contemplated extensive reorganization and development of the country's livestock industry, the impelling motive being the increase of the production of meats for domestic use. To this end the Soviet government purchased abroad large numbers of pedigreed and grade sheep, swine and cattle, established breeding farms and enlisted the services of a corps of foreign animal husbandry experts. While by 1932 the program was fairly well launched, the expected progress was not realized because of mismanagement of the farms, inefficiency of personnel, unsatisfactory care of livestock and inadequate organization of labor. A revision of plans as affecting different phases of the livestock industry was, however, under way. As an essential corollary to the livestock industry the Soviet government set out to modernize its meat packing industry and to construct a series of complete packing plants located strategically with reference to sources of supply and markets. Some of these units were especially designed for preparation of export meat cuts and by-products. There has been some sporadic exporting of cured and refrigerated meats, but thus far the Soviet Union has not been in a position to take a permanent place in the ranks of meat exporting countries and in all likelihood many years must elapse before it can do so. There have been substantial annual increases in the livestock population of Soviet Russia, but information relative to the numbers of head which have found their way to slaughtering establishments is not on record. Sheep raising in particular appears to be flourishing; the recent report of the president of the Sheep Breeding Trust stated that the number of sheep had increased to 2,700,000 head on state and collective farms by the end of December, 1930, as against 1,100,000 for the preceding year. By December 31, 1931, the number had increased to 4,800,000 head and it was expected to reach a total of 7,300,000 on December 31, 1932.

The United States, Denmark, Argentina, the Netherlands, New Zealand, Australia and Uruguay are, in the order of the value of their trade in 1929, the major exporting countries of meat products; the Irish Free State, Brazil and Canada are minor exporting countries. The following figures give the value, in terms of United States dollars for 1929 (except when otherwise indicated), of the export trade in meats and animal fats of the chief surplus meat producing countries of the world: United States, $202,822,000; Denmark, $144,689,000; Argentina, $140,375,000; the Netherlands, $68,990,000; New Zealand, $55,417,000; Australia, $33,576,000; Uruguay (1928), $29,381,000; Irish Free State, $23,174,000; Brazil, $16,753,000; Poland (1930), $12,500,000; Canada, $10,584,000. The United States runs little risk of losing first place to Denmark, largely because it exports a widely diversified range of meat products while Denmark has specialized almost exclusively in bacon. In 1929 American lard exports, the most important single meat product shipped abroad, had a declared value of but 50 percent of that of all exports in the meat group. Pork meats ranked second, the principal items in this group being cured meats largely for the United Kingdom, pickled pork for the West Indies and canned pork for the United Kingdom. Other meat exports in recent years have been miscellaneous meats, consisting mostly of edible offal, going to the United Kingdom, the Netherlands and

Germany; sausage casings; neutral lard; and oleo oil and inedible animal oils and greases.

As an exporter of chilled beef the United States received a definite check during the latter part of the first decade of the twentieth century. The mounting value of its open range lands had led gradually to the substitution of crops for livestock raising in many of the western states, while the opening of Argentinian and Uruguayan *frigoríficos* by American and British groups forced American beef from the British and continental markets. The keen rivalry which ensued in Argentina between the American owned plants on the one hand and the British controlled companies on the other led in 1911 to the formation of a shipping pool, which fixed definite quotas for each shipper. The American houses were assigned 42 percent of the total volume in this first pool; by 1914 they were handling 63 percent of the shipments. Further changes in the respective quotas of American and British plants were made as years went by, but dissatisfaction with the distribution of quotas led to a price war in 1926 which proved disastrous for all concerned. Until a means is discovered of reducing present refrigeration costs and improving existing facilities, it is improbable that Australia, New Zealand or South Africa will be able seriously to challenge the commanding lead of Argentina in the exportation of chilled beef, which began to supplant frozen beef in the Argentinian export trade in 1910. Since the World War chilled beef has gained the ascendancy over frozen beef. Above five eighths of all meat product exports from Argentina in 1929 in terms of value consisted of chilled or frozen beef; an annual average in any normal period would vary but little from this percentage. Canned meats, chiefly tinned corned and roast beef, came second and frozen mutton third. In relative order of subsequent importance were tallows and greases, frozen sausage, meat extracts and sausage casings. The United Kingdom was by far Argentina's best customer, only small quantities being shipped to other European markets. Argentina offers some promise in the future of becoming an exporter of pork meats, as is indicated by the growing importance of its maize crop and the trend toward small land holdings.

In Uruguay chilled and frozen beef, the former leading in tonnage, represented almost 50 percent of the meat product exports according to 1928 values; canned meats were a close second. In recent years the United States has been increasing its imports of canned meat from Uruguay. Other meat products shipped abroad are chilled mutton, jerked beef, animal tallow and greases and meat extracts. The United Kingdom takes a large proportion of all these exports, except jerked beef, which goes to Cuba and Brazil; recent Cuban tariff increases, however, have brought about a drastic curtailment of export volume. With the exception of chilled or frozen beef, which amounted to practically 70 percent of the gross value of meat products exported in 1929, Brazil cannot lay claim to special recognition as a surplus meat producer at the present time. Nevertheless, the concentration of the cattle industry in the south central and extreme southern states of the country is favorable to the extension of an export trade from the viewpoints of climate and convenience to coastal ports.

The Netherlands has occupied for some time the position of the world's premier exporter of oleomargarine. About 70 percent of the oleomargarine is sold in the United Kingdom despite the existence in the latter country of a fairly extensive domestic industry. In 1929 oleomargarine exports represented nearly one fourth of the total value of all meat products and animal fats. It should be borne in mind, however, that although it is classified with meat products much of the Dutch oleomargarine (the same applies to European oleomargarine generally) has vegetable oils as its chief ingredients. Since 1926, when the United Kingdom imposed a ban on fresh meat imports from the continent, the Netherlands has devoted more attention to the development of an export trade in bacon and salt pork. Such exports had by 1929 become the main items in the export trade, reaching a money value total of $22,000,000, or almost one third the aggregate value of all meat exports. Ninety percent of the bacon and salt pork is sold in the United Kingdom. The Netherlands also exports fresh pork, lard, fresh beef and veal, canned sausage and lard compound.

Three fifths of New Zealand's meat export trade during 1929 on a value basis consisted of frozen lamb. Shipments amounted that year to $33,000,000, frozen mutton shipments only to $8,750,000. Virtually all of these meats were supplied to the United Kingdom. Other meat products exported were frozen pork, tallow, sausage casings and frozen beef. Australia offers a direct antithesis to New Zealand in the nature of its export trade in meat products. Beef, mainly frozen meat, constitutes over one third of the

value of meat products entering export trade. About half of this beef is shipped to the United Kingdom; Belgium purchases approximately one sixth of it; Germany follows next in order. Chilled or frozen lamb accounts for a substantial increase in the annual meat export trade, with mutton contributing a smaller share. Practically the entire quantity of lamb and mutton was marketed in the United Kingdom.

Over 50 percent of the meat products exported by the Irish Free State consists of bacon, while fresh pork makes up another 25 percent; the remaining exports are mainly other pork cuts and lard. Almost all Irish bacon is shipped to the United Kingdom; 40 percent of the fresh pork has the same destination, the remainder for the most part being sent to Northern Ireland. Poland while importing American lard and fatbacks is an exporter of pork products. Polish bacon first appeared in volume in the world market in 1929, when nearly 27,000,000 pounds were exported, practically all to the United Kingdom; the next year over double this quantity was marketed in Great Britain. Polish hog raisers are paid subsidies by the government to stimulate the breeding of a suitable type of hog, and as a further encouragement a system of compensatory tariffs on imports was adopted in 1932. Three products—bacon, salt pork and sausage casings—account for the major portion of Canada's export trade in meat products. Bacon valued at more than $6,500,000 was exported in 1929, going almost exclusively to the United Kingdom.

The world's outstanding importers of meat products, with the value of their trade in terms of United States dollars in 1929 (except when otherwise indicated), were: United Kingdom, $605,585,000; Germany, $89,498,000; United States, $40,557,000; the Netherlands, $38,613,000; Italy (1928), $21,820,000; Cuba, $20,214,000; France, $19,388,000; Austria, $15,600,000; Czechoslovakia, $15,000,000; Belgium (1928), $14,937,000; Mexico (1928), $9,695,000. The meat products entering the United Kingdom alone amounted to nearly two thirds of the total value for all eleven countries; also fully 98 percent of the imports remained in Great Britain. Over one third of the value of the British meat imports in 1929 consisted of bacon, two thirds of which came from Denmark and about one tenth from the Netherlands. Chilled beef imports came second, constituting 20 percent of the total value in 1929; 90 percent or more was generally imported from Argentina. Frozen lamb largely from New Zealand followed next, constituting as a rule about 10 percent of the value of meat imports. Other important products purchased abroad were lard, hams, frozen mutton, canned beef, frozen beef, oleomargarine and edible offal.

The principal meat product imported into Germany in recent years has been lard, which in 1929 constituted one third of all the meat imports; most of this came from the United States. Sausage casings rank second, making up one fourth of the total in 1929, with the United States, Denmark and Argentina sharing the bulk of the trade. Chilled and frozen beef comprised around 15 percent of the total value in 1929. In volume imports in 1929 were only about half what they had been in 1925–27, as a result of tonnage quota limitations.

Since the war the United States has become a large importer of canned meats and sausage casings, these two articles making up in value over half the trade. Canned meats are bought from Argentina and Uruguay; sausage casings for the most part come from Australia, New Zealand and Soviet Russia. Fresh beef supplies from New Zealand and Canada occasionally appear on the market in the United States, especially when prices are high enough to encourage this competition.

The requirements of the Netherlands oleomargarine and other fat industries necessitate heavy importations of both edible and inedible tallow, oleo stock and oil, inedible hog greases and unmelted animal fats. The Italian import trade consists of fresh, chilled and frozen meats of every kind, principally beef, with Argentina the largest individual shipper. Fatbacks, half of which usually come from the United States, and meat extracts from Belgium also figure in the import trade.

Cuba provides the United States with its chief marketing outlet in Latin America. In recent years, however, the cumulative effects of economic distress, a rising livestock population and successive upward revisions of the Cuban tariff have had a direct and unfavorable bearing on the import trade of the country. Lard is the most important meat product imported. A stable volume of around 20,000,000 pounds of bacon has entered Cuba annually over a period of several years; salt pork and jerked beef also figure in the Cuban import trade.

France imports fresh and frozen pork largely from the Netherlands, fresh and frozen mutton from Argentina and lard from the United States

and the Netherlands. Since 1925 France has succeeded in restoring its cattle herds which had been depleted during the war; therefore imports of meats other than mutton and pork have declined markedly. Imports of salted pork, ham and bacon also have decreased radically. Austria imports fresh or frozen meats from neighboring countries and lard and bacon from the United States. Czechoslovakia imports lard, largely from the United States, sausage casings from Germany and fatbacks from the United States. Belgian meat imports consist for the most part of chilled and frozen beef, lard, inedible animal fats and fresh meats such as edible offal. In 1928 three fourths of the Mexican imports were of steam lard from the United States; this lard was refined and packaged for retail distribution after reaching Mexico. For most of its other meat products Mexico was self-sufficing.

In order to encourage and to protect home industries and in some instances to supply revenue many countries have placed increased duties on meat imports in the past decade; since 1929 the trend in this direction has been particularly marked. Germany sought to restrict the amount of frozen beef imports through the imposition of definite quotas in 1927; more recently quotas on hogs and cattle shipments from neighboring countries have been established. In 1932 higher duties were levied on such major meat product commodities as beef, veal, pork, lard and fatbacks. The Netherlands took action along much the same lines; quota requirements are in force with regard to beef and veal imports, while special sanitary certificates are demanded on pork product imports, especially those coming from the United States. In 1932 heavier duties were levied on beef and veal and on inedible and unmelted animal fats. Most of the other countries included in the list of major importers of meat products have enacted measures making mandatory the procurement of licenses or permits to import, based on quota allocations. Upward revision of tariffs also has been general for the countries under discussion.

The three largest American packers, Armour and Company, Swift and Company and Wilson and Company, Inc., maintain in many of the European countries branch sales offices, which serve their respective markets through agents in the large centers of the country. This is the policy pursued in Germany. It is somewhat different, however, in the United Kingdom, where the packers' branches sell through local wholesalers in the more important cities much as the home branches do in the United States. A few of the smaller American packers follow a similar sales procedure; but for the most part they deal with import commission houses, which act in many instances as exclusive agents for particular districts. Small packers, who are not regular exporters, enlist the aid of export brokers who have correspondents abroad. Some years ago it was a not uncommon practise on the part of the packers to make consignments of meats, lard and the like to agents and branches abroad. Exchange difficulties, falling prices and sometimes the depressing effect on the local market of consignment stocks awaiting sale have caused many shippers to abandon this policy, although it is still pursued in the case of European branches of packing concerns where there is assurance of periodic turnover on a reasonably stable market. Lard, for example, is consigned under such conditions. Outside of Europe, particularly in Latin America, American packers invariably appoint an individual or firm as their sales representative, unless they sell through an export broker. There are a few exceptions; in Havana and Mexico city branches similar to those in Europe are operated by the largest packers.

In the British dominions exporters of meats usually establish wholesale importing houses to look after their interests in Great Britain. A large British packer operating in Argentina, Vestey's United Investment Corporation, controls a chain of meat shops in England, and much of the output of the packing plant is thus under this packer's control until it reaches the consumer. A considerable proportion of dominion meat as well as meat imported from elsewhere for consumption in the London district is sold in Smithfield Market; here the various wholesale houses have stalls where the retail butchers make their purchases. Reference has already been made to the fact that eighteen of the Danish cooperative bacon factories consign their bacon for sale to the Danish Bacon Company, Ltd., in England; the other Danish bacon factories make shipments several times weekly to English wholesalers.

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SOCIAL ASPECTS. It is a trite saying concerning industries generally that they are both buyers and sellers and that their profitable operation depends upon buying cheaply and selling dearly. What is singular about the packing industry as

a buyer of raw materials, labor and equipment and as a seller of meat products is that it must deal in both markets more or less directly with large sections of the public. The facts that in these markets the public is economically unorganized and that the producers of animals on the one hand and the consumers of meat stuffs on the other are chronically discontented predispose both groups toward a suspicious and perverse attitude in their market relations, especially with a well organized big business like the packing industry. Whether this tendency toward perpetual bickering and captious complaint in livestock and meat markets is a manifestation of an inferiority complex or the spontaneous reaction to persistent abuse need not here be determined. What is significant is, first, that the public relations of the packing industry have long been and continue to be turbulent; second, that the direct relations in which the industry stands to both raw material producers and ultimate consumers are a root cause of this unsatisfactory condition; and, finally, that the most dissatisfied elements, the farmers and the consumers, have sought relief from their handicaps in the industrial *bellum omnium contra omnes* by an appeal to political power. These economically impotent but politically aggressive classes, between which the packers mediate in a narrow range, have shifted the arena of their resistance and attack from markets to legislative halls.

Moreover the circumstances that the products of the meat processing industry are daily necessaries, that the production of its raw materials cannot be economically organized upon a large scale (husbandry, like agriculture, requiring close observation and judicious care), that the transformation wrought by processing of the major part of the products (i.e. dressed meats) is comparatively slight and the time consumed relatively brief and, finally, in consequence, that the industry has a very high rate of turnover and an annual volume of sales exceeding that of any other manufacturing industry—all these do not diminish but rather accentuate the significance of this peculiar situation of the packing industry. Manifestly there is nothing inherent in these circumstances either to assure the meat packers a position of dominance in the markets in which they deal or to foredoom them to one of subjection; and, with equal cogency it might be argued that these fundamental conditions of its economic environment make the industry exceptionally vulnerable, or, on the other hand, afford a good opportunity for "playing both ends from the middle." It would appear, however, that the explanation must proceed in terms of other factors which are essentially extraneous to the basic characteristics of the industry. Such factors are: first, the ownership and control of public stockyards by packing house interests; second, the extensive development of by-products and resulting marked joint cost features of the meat packing industry; third, the acquisition and operation of specialized distribution facilities, particularly refrigerator cars and cold storage depots. All have contributed powerfully to the development of the dominance of the packers in livestock and meat markets, the second and third factors especially through fostering and fortifying a large scale, compact, big business organization of the industry; the third has led to an expansion of the dominant position thus attained into related lines of food distribution.

Before the specific influence of each of these factors upon the growth of the power of the packers is taken up in greater detail, it may be well to observe that this analysis has in view primarily the experience of the United States and Argentina. The conditions in Australasia are radically different, chiefly on account of the remoteness from the major markets and the attendant impracticability of developing by-product utilization to a significant extent and because sheep husbandry affords the primary producers a stronger defensive position in marketing, since they may shift their resources to wool growing. As a consequence meat processing and handling in Australasia have always been organized upon a small scale. The intervention of governments through the agencies of the New Zealand Producers' Board and the Australian Meat Council, unlike that of the American and Argentinian governments, represents therefore not so much an effort to curb a formidable and predacious organization of private business interests in the processing branch of the industry but rather an attempt to overcome a competitive handicap from disorganization and inefficiency by measures calculated to promote standardization and a certain unification of policy. The absence of a powerfully intrenched meat packing industry in the countries of continental Europe has another explanation. Basically it may be attributed to the restrictive influence of population density and high land values upon the livestock industry. The maintenance of a heavy flow of raw material, necessary to the economical operation of a large scale packing house, is thus quite out of the question, the more so in that the

network of customs barriers precludes the assembling of supplies from a wide area. Furthermore, although this is doubtless quite as much effect as cause, the policy of providing public abattoirs and of maintaining public markets has in some measure restricted opportunities for the exploitation of producers and has held in check the growth of meat processing establishments.

In North and South America, more particularly in the United States, on the other hand, the essential conditions for the development of the packing industry along big business lines have been present. First, there is an ample supply of livestock available at convenient shipping points some distance, but not too remote, from large consuming centers. Second, additional leverage for effecting the concentration of the packing industry into relatively few units has been obtained from other sources—the stockyards, by-products and distribution facilities.

There are various ways in which the ownership and control of stockyards by packing interests have been made to yield them substantial advantages over and above those arising from their inherently superior bargaining position. Stockyards are organized livestock markets. Of necessity the sellers, or producers, deal through commission merchants. The stock must be sold within a short time of its arrival at the market, although conceivably it might be held for a few days in anticipation of an improved market. Actually, however, the owners of the stockyards were in a position to enforce rules and exact terms making it prohibitory to "hold over" the stock beyond the day of its arrival. In these circumstances no matter how conversant with the rules, well informed upon the current facts regarding demand and supply and assiduous in advancing or protecting the seller's interest the agent might be, he operated under a severe handicap. As a consequence the principal buyers, representing the packers who had a considerable leeway in contracting for their "requirements" by virtue of the normal possession for a fortnight or so of supplies consisting of meat in process and in course of distribution, were able to force sales of large quantities of stock at prices advantageous to themselves. It was the old case of the Saturday night fish market, in substance. There were of course limits to the extent to which in their own interests the packers might push this strategy. They had to assure themselves in the long run of a sufficient flow of raw material for the profitable operation of their meat business. One way of providing a lure for the maintenance of supply by stockmen was the occasional bidding up of prices on "thin" markets.

The means by which this fundamental strategic advantage of the packers in their privately owned stockyards was reenforced and consolidated were devious. Commission men received the privilege of operating in the yards at the discretion and exercised it at the pleasure of the packers. The same was true in the case of buyers for alternative purposes, as for export, feeding and kosher slaughtering. New entrants to the packing industry itself were confronted at the very outset with barriers to access to the raw material market by virtue of the economic necessity of close contiguity to the stockyards and the latter's control of adjacent sites. In addition to these primary tactical advantages of the original packing houses resulting from their ownership of the stockyards, there were innumerable subtle means of organizing the market for their special benefit. Assignments of stock to pens, provision of feeding services, switching and handling "bunches" of stock before and after sale, grading rules, dissemination of statistical information of the market—these and many other features of the daily operation of the stockyards could readily be so manipulated as to confer substantial preferential advantages upon the favored interests.

In view of all this it is not surprising that the scattered livestock growers, who were ultimately the chief victims of this situation in the primary markets for their products, should have raised a protest. The first response, in the form of positive action, to their insistent demands for governmental protection was the filing on May 10, 1902, of a bill in equity against the largest packers, at that time the Big Six, charging a conspiracy to manipulate the livestock and dressed meat markets and to fix prices in violation of the Sherman Act. An injunction was granted in May, 1903, which upon appeal was sustained by the Supreme Court, January 30, 1905 (Swift & Co. *v.* U. S., 196 U. S. 375). Two months later a group of the same defendants was indicted under the same statute for a similar offense; but after prolonged litigation the individual packers successfully invoked the issue of personal immunity because of information furnished by them to the Bureau of Corporations and the cases were dropped by the government. Meanwhile the results of an official investigation by the Bureau of Corporations, published in 1905, had tended to confirm the charges by the

livestock producers that they were victimized by the packers.

In 1917 the successor of the bureau, the Federal Trade Commission, was ordered by President Wilson to institute an inquiry into the production, ownership, manufacture, storage and distribution of foodstuffs; among others the meat packing industry was studied and at intervals from 1918 to 1920 a six-part report on it was made public. It was a creditable piece of research pursued with vigor, discernment and a commendable indifference to the hue and cry raised by the packers that they were being persecuted by government agents with a partisan bias. The findings of the commission, despite the concealment and even destruction of much evidence by the packers, now become the Big Five, were amply supported. It was demonstrated that the industry had been substantially monopolized and the law plainly violated. Special emphasis was laid moreover upon the unlawful preferences and privileges enjoyed by the packers: first, in livestock markets through their control of stockyards; and, second, in meat distribution through their control of private refrigerator car lines. It is to be noted too that the significance of surreptitious agreements, by which the interests of the dominant group were in these and other essential matters unified, was not overlooked.

The Federal Trade Commission report aroused considerable agitation not only in Congress but among the public generally and in particular among various allied and antagonistic trade groups, notably the livestock producers and the wholesale grocers. Action by the Department of Justice was preceded, however, by conferences with the Big Five packers, resulting in an agreement whereby, when a petition in equity was filed on February 27, 1920, a consent decree was entered on the same day. The terms of this uncontested decree were singularly injudicious. In some respects it imposed indefensible burdens upon the defendant packers, as in the requirement that they should abandon and forsake all interest in the so-called "unrelated lines" of food processing and distribution, such as the canned fruit and vegetable trade. In other respects it left the power and practises of the defendants unmolested, notably in regard to the ownership and operation of the private refrigerator car lines. But the most salutary feature of the decree was the enforcement of a divorce of the packers from their stockyard interests.

The consent decree of 1920 was followed a year later by the enactment of the Packers and Stockyards Act. The measure was undoubtedly designed to restore and maintain competitive conditions in the packing industry and, on the other hand, to terminate even the prospect of potential competition among stockyards by their recognition as public utilities. This sharp distinction in the public policy established in the two fields is partially recognized by the division of the act into four major sections, one of which applies exclusively to the packers and another exclusively to stockyards and dealers. But the effective enforcement of two types of regulation so divergent in aims and methods cannot reasonably be expected from a single agency such as was provided for in this statute under the aegis and ultimate responsibility of the secretary of agriculture. Moreover there are certain provisions made applicable to both classes of business, such as that for enforcing standardized accounting procedure and authorizing rules for periodic reporting, which while clearly valid for the public utility class, that is, the stockyards, are of dubious legality as applied to a business like meat packing traditionally regarded as "private" and otherwise so treated in this very measure. From the economic as distinct from the legal standpoint, however, this may well be regarded favorably as an experimental "entering wedge" for the more effective regulation of large scale industry.

The subsequent history of the consent decree of 1920 and of the Packers and Stockyards Act, so far as these are concerned with the relationship between the packers and their primary, or raw material, markets, may be briefly summarized. No challenge has been made of the legality or of the expediency of the removal of the stockyards from packers' control by the consent decree, the bitter and almost continuous litigation over the enforcement of its terms having centered entirely around the provisions estopping the packers from engaging in the so-called unrelated lines of food distribution. The administrative regulation of the stockyards and the dealers operating in them, not only in reference to licensing, bonding and accounting procedure but also with respect to stockyard rates and the fees of commission men, has been upheld judicially [Stafford *v.* Wallace, 258 U. S. 495 (1922); Tagg Bros. *v.* U. S., 280 U. S. 420 (1930); Denver Union Stock Yard Co. *v.* U. S., 57 Fed. (2d) 735 (1932)]. So far as the dominance of the packers rests upon other features of the organization and activities of the trade,

however, the 1921 legislation and indeed the 1920 decree appear to have had slight effect upon their position. The transfer of the responsibility for the enforcement of the antitrust and unfair competition laws, in the case of this industry, from the Department of Justice to the Department of Agriculture was of questionable expediency. In practise, if the administrative indifference to the Armour-Morris merger of 1923, which reduced the Big Five to the Big Four, may fairly be regarded as an index of policy, the packers appear actually to have been put under a freer rather than a tighter rein in the conduct of the business for their own ends.

The by-product feature of the packing industry has developed, especially in the United States, to prodigious dimensions, as has been pointed out above. The significance of this wide range of the packers' interests is manifold. In the first place, the great diversity tends to assure them a stability of business seldom attainable in other fields. Second, it permits a diversion of materials in process from one use to another in accordance with the changing relationships of the market demand for different end products. In the third place, and perhaps this is the most significant, it leaves a wide latitude of choice to the packers in the allocation of costs and the pricing of their products. For not only are overhead costs, as elsewhere, to be treated as joint costs but also the material costs and even a considerable part of the labor costs must be so ranked. In these circumstances the price policy with respect to the major product, dressed meats, may easily be such as to give the appearance of a small, even less than competitively "normal," margin of profit, whereas over the whole field of operations the returns may be inordinately high. On the other hand, it must be evident that in the absence of some understanding upon price policies or otherwise among the packers the maintenance of a "normal" level of profit would be exceedingly precarious. For, if each packer allocated his costs and framed his price structure independently there would be grave danger that each would distribute the joint costs or would "load" the prices of the various end products in different proportions. The consequence would be that each product of every packer would have to meet the market price of competitive articles which rival packers had "loaded" with the minimum share of the joint costs. The outcome might well be that the products in the aggregate would not yield a sales value adequate to cover the aggregate costs. It follows that the establishment of some common rule in respect to pricing or to territory or to output volume was practically inescapable under a system of free business enterprise in the packing industry.

Experience has indicated clearly that the imposition of a common rule of some sort has been adopted by the packers as a normal procedure. As early as the 1890's by their own admission they were operating a pool called after the name of the secretary the Veeder pool. Under this arrangement the respective shares of the total shipments of dressed meat into specified market territories of the several members were agreed upon in weekly meetings; and the prices to be charged by each were fixed by an arbitrary cost margin computation based upon the purchase price of the livestock. After the abandonment of these pools in 1902 because of public agitation and the imminence of the Sherman Act prosecution previously mentioned, a scheme was devised for effecting a complete proprietary consolidation of the interests of the entire group of big packers. The National Packing Company was launched pursuant to this scheme in 1902, and six of the minor concerns involved were actually acquired; but before the plan could be consummated clouds began to appear on the horizon of the investment market, banker credit cooperation was withdrawn and the ambitious merger program had to be postponed. The change in the temper of public opinion with the advance of the Roosevelt administration and the growth of the progressive movement made it inadvisable to return to this scheme later. The National Packing Company was eventually dissolved in 1912, although while it lasted it served as an effective vehicle for harmonizing the buying and selling policies of the principal interests in the packing industry. Its properties were divided up among the Swift, Armour and Morris interests, which together had owned and operated the concern. Meanwhile a new and simpler common rule had been devised. This was the establishment of a fixed percentage of livestock purchases for each of the several big packers. There was adopted what was known as the "1910 arbitrary," or an agreed division of the total livestock purchases of the group throughout the United States.

The third feature of the aggressive policy through which the expansion and consolidation of the interests of the big companies have been accomplished is the acquisition and control of distribution facilities. The importance of re-

frigeration in the development of large scale organization in the packing industry has already been pointed out. While there were no patents restricting the construction or operation of refrigerator cars by any packer who might choose to make use of them, the facts that only large fleets of cars serving a wide and diversified market could be economically operated and that special preferences and concessions were early and persistently granted by the railroads to the largest packers tended to deprive late comers or minor operators in the industry of equal opportunity of access to markets. Further, as the Federal Trade Commission pointed out: "The Big Five packers have an added advantage which indicates the unity and cooperation under which they operate: . . . their cars are pooled in that they lend them back and forth . . . when one or another is in particular need of equipment."

Once possessed of a substantial monopoly, as the Big Five were by the time of the World War, of the indispensable means of shipping dressed meats to any point in the country under any kind of weather conditions, the packers could extend their domain by utilizing these same facilities in the conquest of new fields of distribution. With all of the superiority in service through expedition of movement, convenience of scheduling and assured maintenance of grade standards which could thus be capitalized, there seemed to be a good prospect of their speedy displacement of a large section of the wholesale grocery, dairy products, vegetable and fruit trades. Beginning about 1915 rapid progress was made in this campaign, and the question was raised whether the big packers were destined to become centralized wholesale food purveyors to the entire United States. A similar tendency was noted in Great Britain, although in that country the emphasis was more upon the vertical than upon the horizontal direction of expansion. Measures were taken in both countries to stem what was regarded from the public standpoint as the untoward trend of events.

By the terms of the consent decree of February, 1920, the defendant packers undertook to relinquish and forego all interest in the wholesale distribution of a long list of specified commodities embraced within the lines of trade referred to above. It is at least dubious whether this restrictive measure was expedient, considering the nature of their alleged offense, since it left them in undisputed and uncurtailed enjoyment of the very privileges and preferences upon which their hegemony in the meat trade had been built up. And it is more than dubious whether this drastic measure was sound, since it enforced the utilization of the concededly superior distribution facilities of the packers at a lower level of efficiency than experience had proved them capable of attaining. Nevertheless, the packers were ill prepared indeed to go into equity to seek a modification of this restrictive decree. This circumstance beyond a doubt helps to explain why, despite the most determined and persistent efforts, which have succeeded in carrying the issue twice before the Supreme Court of the United States, the limitations of the consent decree of 1920 are at present in full effect [Swift & Co. *v.* U. S., 276 U. S. 311 (1928), and U. S. *v.* Swift & Co., 286 U. S. 106 (1932)]. It is significant to note, however, that the packers are still operating their private car lines. It is only the commitments, not the omissions, of this unfortunate decree which have been challenged.

The discussion up to this point has been concerned with the mode of organization of the meat packing industry and with the attempts, by legal or administrative regulation, to mold the structure, policy and practises of the industry into closer conformity with what have been conceived from time to time to be paramount public interests. With regard to the social aspects of the industry the most important questions in this connection are the standards of wholesomeness maintained for the products of the industry and the standards of living and of working conditions maintained for the employees. Because of the noisome odors which inevitably attend the practical business of butchering, stockyards and slaughterhouses have long been confined by law to designated areas usually situated at some distance from the center and from the better residential sections of urban communities. For economic reasons the districts commonly designated or selected for this specialized use have generally had a terrain making them ill adapted for any alternative use, and unfortunately in many regions this has necessarily meant a low and swampy place. So long as slaughtering was only an occasional occupation of local butchers this utilization of "waste land" was not especially bad policy, but when slaughtering became a continuous, large scale, major industry, the topographical characteristics of these sites became nothing less than a calamity. Above all, poor drainage is the worst conceivable nemesis to the production of wholesome meat and animal products. Slaughtering, dressing and curing quarters

cannot be kept clean without a liberal use of water, and where there is the slightest tendency to the accumulation in stagnant pools of water bearing refuse matter there is certain to be great danger of contamination. Under the profit motive, however, and the exigencies of a fixed-right-of-way transportation system, such as the railways provided, the escape from these waste land Packingtowns was impossible. Even more significant is the fact that the cost of introducing equipment, facilities and measures to offset their naturally bad features was regarded as prohibitive by profit motivated packers relentlessly driving toward the realization of vast ambitions over the tenacious resistance of the old, small town, local butcher shops.

It required the vigorous onslaught of a reforming crusade to break down the indifferences of habit and inertia. In the United States Upton Sinclair led this movement, and his novel *The Jungle* was the alarm clock which awakened both the packers and the public to the arrival of a new day. *The Jungle* was first published in 1906, and before the end of that year two official investigations by agencies of the federal government had been made and Congress had passed new legislation making governmental inspection for the first time compulsory. Moreover the required inspection was extended from the antemortem examination of the animal to a much more rigorous, and incidentally far more essential, inspection of the methods and processes of the preparation of the meat stuffs. So volcanic an upheaval could not fail to attract attention abroad, particularly in Great Britain, which depended so heavily upon foreign meats. The result was that Argentina, also in 1906, adopted measures providing for the regulation of the conditions under which livestock was transported and slaughtered as well as for the inspection of the animals. In succeeding years the British government was able to bring pressure to bear on Argentinian officials in order to effect a tightening of the inspection machinery.

The development of standards for the amelioration of the living and working conditions of workers employed in the meat packing industry has not been attended with the same degree of success. The unsanitary environment in which the laborers must live in the vicinity of the stockyards and packing houses has long been a matter of protest both by reformers and by employees themselves. Nevertheless, despite the obvious and direct connection between the health and hygiene of meat workers and the cleanness and wholesomeness of meat products, little or nothing has been accomplished in the way of special public regulation of the responsibilities of packers to their employees. The latter have been left, like workers in many other fields, to shift for themselves. They have done so with indifferent success, pursuing methods familiar elsewhere. Sporadic strikes have given evidence of their resistance but these have yielded only unimportant gains, especially in job security. Not even the notable evidences of solidarity in the bitter strikes of 1886, 1894, 1904 and 1921 brought significant results.

The efforts to organize the workers have in the main been sponsored by the Amalgamated Meat Cutters and Butcher Workmen of North America. Whether in spite of or because of its industrial as opposed to craft structure, the organization has made little headway, save temporarily in periods of strike agitation. The large employers have steadily refused to recognize or deal with the union directly. But doubtless the most formidable obstacle to effective unionism in the industry has been the dissipation of all around skill as a significant factor in employment, less because of advances in the use of machinery than because of the minute subdivision of tasks, which makes the acquisition of the special skill required for each job a relatively simple matter. There has consequently taken place an infiltration of large numbers of inexperienced workers, made up at various times predominantly of particular nationalities or races, who usually have not found a ready compatibility in temperament and outlook with those previously employed. These antagonisms make general employee cooperation difficult if not impossible. The high rate of labor turnover resulting from the employers' easy access to such a wide and diversified labor market has also stood in the way of the development of a strong and militant labor movement.

It is manifest that the meat packing industry has not solved the critical problem with which it is confronted by virtue of the peculiar position it occupies. After the upheavals of a quarter century ago, which brought it the unenviable distinction of being perhaps of all industries that with the greatest ill repute, public criticism has subsided. This may be traceable in part to a doubtfully justified sense of security derived from the establishment of a rigorous system of regulation for the safeguarding of the wholesomeness of meats when they leave the precincts of inspection; in part it may be due to the

belated and imitative development of welfare capitalism within the industry as a means of allaying labor discontent. No doubt too the establishment in 1919 of the Institute of American Meat Packers has had a salutary effect on the industry's public relations. Thus the institute, in affiliation with the University of Chicago, has encouraged scientific research, sponsored the study of the economic problems of the industry and has trained experts for managerial positions. But it is not inconceivable that the absence of public criticism in recent years has been the consequence also of a prevalent although possibly only temporary attitude of apathy and cynicism concerning all that pertains to the responsible performance of industrial functions.

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See: LIVESTOCK INDUSTRY; FOOD INDUSTRIES; DAIRY INDUSTRY; REFRIGERATION; FOOD SUPPLY; NUTRITION; FOOD AND DRUG REGULATION; STOCK BREEDING; AGRICULTURAL MARKETING; AGRICULTURE; CATTLE LOANS; COMMODITY EXCHANGES; TRUSTS.

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MECHANIC. The mechanic as contrasted with other skilled workers is a worker who is equipped to deal with various kinds of mechanized apparatus and to use relatively complicated tools and who possesses considerable technical knowledge. In general usage among workers themselves the term is a synonym for a skilled worker of journeyman rank and may include workers who, strictly speaking, are not mechanics. Skill applied to forms of labor distinguished from mere utilization of muscle forms the essential element of the mechanic's qualifications; but the mechanic is as sharply differentiated from craftsmen and artisans as are all three from ordinary unskilled workers.

Although the word mechanic appeared in the English language at a surprisingly early date (there is a reference as early as 1390 by the poet John Gower) it came into general use only after machines were relatively common and into permanent use only after the industrial revolution. As early as 1681 a master mechanic was defined as one who repairs and manages machines. Both as words and as forms of labor craftsman and artisan appeared before mechanic. The term craftsman does not have the same meaning as artisan, which seems to have appeared in the English language considerably after the former. Some idea of the changes in technology and forms of labor may be gathered from the progression in terminology: serf, craftsman, artisan, mechanic and junior technician. Technician did not appear as a term until 1833, and junior technician not until recently. The term technician is not yet widely accepted as a description of the skilled machine operator in the new machine age, but it is likely to supersede mechanic as the older machine age gives way to the newer age of automatic machinery.

Pre-industrial society, strictly speaking, did not know the mechanic at all, except in his primitive predecessor, the artisan. Artisans were workers who used their skill on machines or other mechanical appliances, as contrasted with craftsmen who used their skill directly on the material out of which products were made. There were border line cases, but the distinction is fundamental. Craftsmen included wood carvers, weavers, stonecutters and makers of violins, pottery and furniture. Many of the earlier machines used craftsmen rather than artisans or mechanics; thus the potter's wheel involved a real craft. The skill of the ancient and mediaeval craftsmen bordered on the arts, which was manifest in the high quality of their products. While the artistic element predominated in the skill of the craftsman, mechanical aptitude and precision characterized that of the artisan. One group of artisans worked with machines; these included pumps, catapults, well sweeps, simple cranes, wine presses, windmills, organs, water clocks and grinding apparatus. They were elementary and crude, but their construction, much of their operation and their repair required considerable skill and technical knowledge, which

increased as machines became more complicated. The skill of another group of artisans bordered on craftsmanship, although the major element was mechanical aptitude. This group included blacksmiths, coopers, millwrights, carpenters, armor makers and later typesetters. These artisans were all predecessors of the modern mechanic.

The artisan of the earlier technology and the mechanic of the machine age do not differ essentially in the degree of their skill; the difference involves rather an extension of the worker's power and an increase in the necessary technical knowledge. There is measurable continuity in the skill of the artisan and the mechanic; the millwright, for example, evolved into the machinist or mechanical engineer. The same literacy is involved in typesetting by hand as by machine, yet the old printer was as pure an example of the craftsman artisan as the linotype operator is of the mechanic. At first the evolution of industry away from handicraft meant giving the artisan or mechanic more tools of greater complexity and power. It was during the transition from handicraft to machine production in the earlier stages of the industrial revolution that the mechanic secured his most favorable position in industry. Factories did not increase in size, and there was an intermingling of the two types, craftsman and mechanic, with the mechanic supplanting the craftsman as machines came more generally into use. The skill and technical knowledge of the mechanic were not diffused, and he therefore acquired a position of peculiar importance and independence, comparable to that of the craftsman of a former age.

The peculiar importance and independence of the mechanic passed with the decline of small scale industry. Productive units increased in size through the massing of various types of machines, which moreover absorbed more and more of the worker's skill; the workers consequently became relatively unskilled and passive operators of the machines, while the mechanics were relegated to maintenance and repair, "industrialized" and deprived of the independence which characterized their employment in small shops. Nevertheless, many of these small shop mechanics persisted and new types were produced by the growth of non-factory industry, among them locomotive engineers and electricians. At the same time the development of more complicated machinery required operation by the "key" man, a new and higher type of mechanic, the junior technician. Labor formerly unskilled became highly technical; thus the occupation of stoker—traditionally the lowest—gave way to that of the white coated junior technician who operates the boilers by tending a gauge. Other automatic machinery required no skill on the part of the workers but only standardized application—the skill employed in hand rolling cigarettes, for example, has given way to completely mechanical attendance upon an infinitely complex automatic machine. All types of automatic machinery, however, demand the services either of the mechanic or of the junior technician.

It may be asked whether modern industry with its mechanized and semi-automatic character has eliminated the mechanic or whether it has extended the sphere of his competence. It is probable that while it makes heavier demands upon his knowledge and skill, there is a tendency for the number of mechanics relatively to decrease. Their position has been greatly transformed not by change in technology but by change in ownership of the implements with which they work. Ownership of tools once went with the work performed. In the early stages of the machine age investment in tools on the part of the capitalist was trifling compared with investment in labor. At present in the more advanced stages of industry with the creation of colossal units investment on the part of ownership has come to outbalance labor costs, and the economic value of the mechanic has been correspondingly reduced. This demotion on the economic level has resulted in a different rating of skills, while in fact skill has probably not been reduced. There has been moreover a sharp transference of skill from the workers collectively considered to the efficiency engineer in charge of the plant as a whole. In short, the mechanic does not have a vested interest even in his skill but must follow the blue prints provided by the industrial engineer. Nevertheless, even blue print reading is a skill in itself. Henry Ford is credited with the statement that workmen on the assembling line in automobile plants, where jobs are highly specialized and divided and redivided to simple operations, "have more skill than old-fashioned mechanics ever had." He is supported by H. Dubreuil in *Le travail américain vu par un ouvrier français* (Paris 1929; tr. as *Robots or Men?*, New York 1930). In some plants, where production has been made almost automatic, company schools have been founded for the training of workmen.

Questions concerning the degradation or ex-

altation of skill involve chiefly the mechanic in the larger industrial factory units. There has been no degradation of the locomotive engineer's skill or of that of machinists in maintenance and repair shops. The electrician's four years of apprentice training are now supplemented with postgraduate courses designed to keep him abreast of the ever changing and advancing character of electrical science. The advent of the vacuum tube and the photo-electric cell has opened up an entirely new realm which he must enter and master; the trade becomes more rather than less complicated as electrical technology goes forward.

Consideration of the mechanic in factories must take into account a distinction between industries employing scientific management principles and those utilizing mass production methods. They may be mutually exclusive. Confusion of these types accounts for the conflict of views upon the question of disappearance or persistence of skill. Scientific management is predicated upon skill, although in the early developments of Taylorism there was a tendency to underestimate the value of creative cooperation on the part of the workman. There is a modern school of engineers who hold that scientific management can realize its full possibilities only when the mind of the worker grasps the totality of the operation in accordance with the mind of the efficiency engineer and performs that operation in full accord with the general plan. But this does not involve skill in the older meaning of the term, nor is scientific management generally applicable to all industries. The development of technology tends to eliminate the unskilled; they do not, however, become skilled workers but only semiskilled, since the new skill is highly limited and standardized. As most of the factory workers become semiskilled many of the functions formerly performed by the mechanic are rendered superfluous; but while the latter is displaced in the direct operation of machines, he acquires new functions in other parts of the productive process. Even mass production industries require mechanics or skilled key men at certain stages of their operation; moreover as machines become more numerous and complicated, more machinists or mechanics are necessary to maintain and repair the machines. And where the productive process is most automatic, as in electric power plants, for example, most of the workers are skilled mechanics or junior technicians. Nevertheless, for industry as a whole the number of mechanics seems to be diminishing relatively along with a diminution in the number of other types of skilled workers.

For the mechanic the most disconcerting feature of the changing frontiers of industry is the dwindling of jobs. It is argued that technological unemployment cannot become permanent, as the causative lag between the elimination of men from one craft and their reabsorption in another will finally be destroyed. Yet in the United States in the years 1923 to 1929 there was a permanent group of unemployed workers fluctuating around 1,500,000; this unemployment was caused by the introduction of labor saving devices and the reorganization of industry on a more efficient basis. The situation moreover threatens to become worse. Development appears to be moving toward rather than away from automatization of industry. It is the shrinkage of jobs in every industry, farm as well as urban, which complicates the problem of technological unemployment. Nor have the building trades escaped the impact of technological change. Carpenters whose predecessors were craftsmen in the field of woodworking and cabinetmaking now find themselves saw and hammer men, required merely to assemble factory products which have been shipped to the scene of the construction job; while the painter debates whether the enforced use of a four-inch brush will allow him to compete with paint spraying guns. The plumber mechanic finds that improvements in heating systems cut the number of jobs in half; the electrical mechanic discovers that, because of the inclusion of raceways in the walls during the erection of the building and of the changed character of conduit and wire, about one third the number of men needed twenty years ago can now wire a building.

The advancing process of mechanization not only of industry but of the home and office and of many aspects of living has given increasing importance to maintenance and repair mechanics. The modern theater uses more than two hundred motors, which demand a crew of mechanics for their supervision and repair. A multitude of service stations and garages throughout the country and the increasing use of mechanical appliances have given the mechanic new fields of operation. He operates his own small back street repair shop or works as a service man for great corporations which are built on the vertical plan and undertake not only to supply consumers with machines but to give service on a six-month or three to four-year basis. The mechanical refrigerator and the radio are outstanding exam-

ples of such service, while oil burners are now being sold on a five-year service basis. It is likely that the mechanic surrendered another traditional prerogative when he attached himself to the corporation service group. His opportunity for group action, which took the place of his vested interest in skill or in tools, diminished. Electricians who in the electrical construction industry were making in years of active business as much as $3000 per year were paid perhaps half this sum as maintenance men for corporation service units. In some cities the repair business takes on standardized, chain store aspects. Here the number of mechanics has definitely increased in recent years, yet the number of available jobs has begun to diminish.

In industries where mechanics predominate increased wages are granted as compensation for a high degree of skill. Employers are not unwilling to pay for workmanship of high order. A strong point of agreement between employers and union men has been upon this question of technical efficiency. The employers want crews that are swift, skilled and efficient. The union wants this kind of mechanic, recognizes that his skill is a commodity with a definite market value and seeks to attract it to the organization, while the employers seek to purchase it in the open market. More than one contractor in the building industry has gone into bankruptcy because he has employed incompetent labor. Even when he has joined with his fellows in forming and maintaining a union, the mechanic remains an individualist where his craft is concerned. He retains all the pride and instinct of workmanship of the older artisans and craftsmen; these characteristics are, however, perverted into an occupational snobbery, which exists not only among the mechanics with regard to the less skilled but also among various classes of mechanics. Pride in craft may be nevertheless a hazard to the economic advancement of the mechanic. It accounts for the small percentage of wastage and spoilage in American industries and the swiftness of technological accomplishment. If American industry rests upon American inventive genius, this in turn depends upon the mechanical skill which is represented by the masses of American workmen.

In the building trades mechanics have raised rather than lowered standards of workmanship during recent years. Unions in association with employers and public school boards have set up training schools which are merely extensions of the union apprentice system. The building trades cannot be mastered academically but only through practise. The curriculum for electrical workers in a typical school consists of a four-year course including seventy-four separate projects divided as follows: nineteen in simple circuit and house wiring; sixteen in apartment house and commercial wiring; twenty-one in direct current motors, controls and power wiring; eighteen in alternating current motors, controls and power wiring. The men study these projects while pursuing their trade. Cooperation of the unions with school boards has probably acted as an automatic check upon an influx of workmen into these trades, but many "hairpin artists" have been recruited from unsuccessful mechanics and engineers in other fields and probably from boys with uncertificated mail order educations.

Mechanics were the most active element in the American trade union movement of the period from 1825 to 1860 and are still influential in the present organized trades. Although highly individualistic (a trait which in political manifestations led to acceptance of the program of the agrarian radicals) they early expressed the cooperative capacity to organize. Later other skilled workers began to dominate the labor movement, although some of the most powerful unions are still composed of mechanics; for example, those of the printers, electricians and locomotive engineers. In general organization among the mechanics followed the general pattern of American unionism—it flourished in the sheltered trades and was almost non-existent in the massed basic industries. The mechanics' unions had all the characteristics of other craft unions. In recent years unionism among the mechanics has been virtually stationary and in some cases (as among the machinists) has perceptibly declined.

The craft ideal as well as the economic motive has caused unionism to persist among mechanics. The new technology apparently favors craft unionism as much as it does industrial unionism. When an industry becomes semi-automatic and stabilized, the jobs which remain are comparatively permanent. The opposition to unionism on the part of powerful business units rather than the psychology of the mechanic must be accepted as the primary cause of the retardation of union organization. Industrial unionism like craft unionism at present will have to take into consideration the differentiation in skills. Industrial unionism requires a departmentalized organization and will probably mean a gain in flexibility

on the industrial field in negotiations with employers. Yet there are no natural lines upon which workers may be grouped, and divisions are more or less arbitrary. Just as factory units may be too large, so organizations may become unwieldy through becoming crowded with workers of many types. Unionism in Soviet Russia has experienced this difficulty, and efforts have been instituted to decentralize some of the larger labor organizations. An organization like that of the electrical workers, which cuts through all industries, might experience difficulty in performing its functions if it were grouped with other industries, even those closely related to it. Electrical workers, for example, may be grouped with approximately twenty other building trades workers or they may themselves form an industrial union, drawing their membership from the telephone, power generation, radio, electrical manufacturing and electrical construction industries. About 700,000 workers would compose such a unit. The constitution of the present electrical workers' organization does in fact provide for such an industrial union. The miners' organization is an industrial union. In some cases it may be necessary to combine certain aspects of the craft union with industrial unionism. Undoubtedly the mechanics will never again play the dominant role in American unionism that they played in the earlier stages of the movement, since unionism must increasingly depend upon the mass of semiskilled workers. Unionism among mechanics is bound up with the future of unionism in general.

M. H. HEDGES

See: HANDICRAFT; INDUSTRIAL ARTS; INDUSTRIAL EDUCATION; APPRENTICESHIP; INDUSTRIALISM; MACHINES AND TOOLS; TECHNOLOGY; TRADE UNIONS.

MECHANICS' LIEN. *See* LIEN.

MECHANISM AND VITALISM. These terms indicate two opposed points of view in the interpretation of the phenomena of life, between which biological thought has oscillated throughout its history. In its most general form the difference between the two schools may be expressed as follows. The mechanically inclined biologist lays stress on the fact that whatever else living things may be they are certainly subject to physicochemical laws, and that the history of biology and especially of physiology shows that it was only when the methods of physics and chemistry were adopted that rapid progress began to be made. He infers that in all probability future progress depends upon an extension and further development of these same methods. Sometimes he may go even further and claim not only that the general trend of biology is toward physicochemical explanation but that one can already say that there is nothing in the phenomena of life which cannot or will not ultimately be reduced to physicochemical processes. The vitalist, on the other hand, is impressed with the fundamental difference between the animate and the inanimate. He urges that so far the processes occurring in living things have not actually been explained completely in terms of processes occurring in inanimate nature, and that the mechanists are not only drawing a heavy bill on the possible progress of tomorrow but are unconsciously influenced by metaphysical or epistemological assumptions regarding what "must" be the ultimate nature of explanations. While appreciating the contributions made to biology by the use of the methods of chemistry and physics the vitalist wishes nevertheless to emphasize the autonomy of biology, the independence, originality and irreducibility of the phenomena of life.

In the history of the controversy between vitalists and mechanists these broadly contrasted views have naturally been expressed in a great variety of forms, influenced to some extent by changes in technique and methodology but in much greater measure by changes in general philosophical outlook. Only a brief survey can be attempted here.

The most influential form of the vitalist doctrine in antiquity is Aristotle's theory of entelechy. This is connected with the distinction drawn by him between matter and form, potentiality and actuality. In the case of every concrete thing its matter, or bare potentiality, may be distinguished from its form, or essence, which is needed to make it actual. In the case of living things the soul, or vital function, is the entelechy which makes the matter, that is, the inorganic substances constituting the body, into an organism, or living unity. Compare the often quoted passage: "Soul is the primary actuality of a natural body endowed with the capacity of life. It is therefore unnecessary to ask whether body and soul are one, as one would not ask whether the wax and the figure impressed on it are one, or in general, whether the matter of a particular thing and the thing composed of it are one" (*De anima*, bk. ii, ch. i).

The mechanistic point of view was expressed by the atomist school of philosophers, who

sought to explain all vital and even human activities in terms of processes of external nature and without appeal to purpose or to immaterial agency. In the stoic school, on the other hand, vital forces were regarded as material principles, but their method of action was distinctly teleological.

In the modern period the issue came to be raised in a far clearer form as a result of the triumphant growth of the mechanical conception of nature in the seventeenth century. Descartes was the first among the moderns clearly to enunciate the view that vital phenomena are in ultimate analysis resolvable into matter and motion and therefore require only physical principles for their explanation. Early in the eighteenth century Stahl, the author of the phlogiston hypothesis in chemistry, gave a fresh statement of vitalism which exercised great influence. He stressed the contrast between mechanism and organism and maintained that in the living organism the soul was the essential part for the sake of which the body exists and by which it is controlled. "Vital activities," he wrote, "cannot, as some recent crude speculations suppose, have any real likeness to such movements, as, in ordinary way, depend on the material condition of a body and take place without any direct use or end or aim."

The subsequent history of physiology, however, was in the direction of the mechanistic point of view, strengthened especially by the growth of chemistry; although it is important to note that many of the great men who contributed to the extension of our knowledge of biological phenomena did not in theory favor either mechanism or materialism.

Until the end of the nineteenth century physicochemical conceptions dominated; they reached their culmination in the writings of Huxley and Max Verworn. Writing in 1875 Huxley says: "A mass of living protoplasm is simply a molecular machine of great complexity, the total results of the working of which, or its vital phenomena, depend on the one hand, upon its construction, and on the other, upon the energy supplied to it; and to speak of 'vitality' as anything but the name of a series of operations, is as if one should talk of the horology of a clock" ("Biology" in *Encyclopaedia Britannica*, vol. iii, 9th ed. 1875, p. 681).

In 1910 Verworn writes: "The explanatory principles of vital phenomena must therefore be identical with those of inorganic nature—that is, with the principles of mechanics" ("Physiology" in *Encyclopaedia Britannica*, vol. xxi, 11th ed. 1911, p. 554).

The claims of the mechanical point of view did not, however, remain unchallenged in the nineteenth century, and some of the most powerful criticism came from those who were foremost in their attack upon the cruder forms of vitalism. Among these critics must be mentioned Lotze and Claude Bernard. Lotze pointed out that in the scientific treatment of vital phenomena the mechanical method of treatment was absolutely necessary, yet this kind of explanation could not be the last word upon the subject, for the notion of end is indispensable. He urged further that the notion of mechanism in general, in the sense of systems in which the total effect is a resultant of forces in themselves mutually indifferent and whose effects are singly or severally calculable—although a necessary abstraction of science—does not at all correspond to what happened in reality; that in fact the combination of several elements could be followed by effects which were not deducible from the several effects produced by the reactions between every pair of them (*Metaphysics*, bk. iii, ch. viii).

Claude Bernard (1813–78) very emphatically dissociated himself at once from the vitalists and from the materialists. The notion of a vital force, he urged, was barren, since it could accomplish nothing except through the agency of the general forces of nature. On the other hand, physicochemical conditions could not account for the order and harmony exhibited in living things. He speaks of an *idée directrice*, or a *force évolutive*, inherent in every living thing. These concepts are not helpful in science, but metaphysically they are of the greatest importance (*La science expérimentale*, 6th ed. Paris 1918). Bernard's final position is not free from ambiguity, but on the whole Driesch is correct in regarding him as a true vitalist.

The Darwinian theory of the differentiation of species by natural selection is commonly regarded as having been very influential in the increasing dominance of the mechanistic conception of life. This is probably true historically. Logically, however, there is no necessary relation between the Darwinian theory and the physicochemical interpretation of living structure and function, since the theory assumes the existence both of variations and of hereditary transmission, and it is an open question whether these can be interpreted in exclusively physical terms.

Of what is sometimes called neovitalism

Driesch is perhaps the most noteworthy exponent. His argument is twofold. First, in what he calls deductive vitalism he seeks to establish the possibility of non-mechanical agency, whereby a unity or totality is produced which is not spatially or mechanically predetermined. The bearer of such "individualizing" causality, which acts according to him by suspending possible change or relaxing suspension, he designates as entelechy; "an agent sui generis, nonmaterial and non-spatial, but acting 'into' space, so to speak." Secondly, he gives empirical proof of vitalism designed to show not only the inadequacy of the mechanical conception of life but also more positively the existence of certain indicia, or characteristics, pointing to the autonomy of life (restitution and regulation, active adaptation and the phenomena of instinct and its regulation).

This sort of vitalism is rejected by nonmechanists such as J. S. Haldane as too indefinite to be of value as a working category. On his side Haldane is concerned to stress the wholeness, self-determination and self-maintenance of living things, their inherently coordinated structure and activity in relation to their environment. "What part is to part, or environment to organism, can only be expressed in terms of the organism's life as a whole. This gives definition to the parts and environment alike, along with their activities, and so makes it possible to treat them scientifically" (*The Philosophical Basis of Biology*, p. 29).

Biology in his view must employ its own categories, for, on the one hand, there is in living wholes an element of immanent order which physical conceptions fail to express, while, on the other, this order cannot profitably be interpreted in terms of conscious purpose, the reactions observed being "blind." With this may be contrasted the views of the psychobiologists, like E. S. Russell, who regard life and mind as essentially identical, on the ground that both vital and mental phenomena exhibit the elementary psychic moments of tendency, mnemic action and regulability. It must be added that metaphysically Haldane is an idealist, and he regards the categories of physics, biology and psychology as abstractions necessary and irreducible on the scientific level but only imperfect renderings in different forms of one and the same spiritual reality.

In recent philosophic thought the whole controversy has been reexamined in the light of more general theories of reality. The situation may be summed up thus: (a) The school of emergent evolution repudiates the appeal to any vital force, entelechy or *élan* supposed to control what is otherwise merely mechanical. The organism is not made up of mechanism plus entelechy but is a new form of integration or order of relatedness, emergent in the sense that it is not deducible as a resultant from the data afforded by the elements of a lower level of relatedness, such as atoms, molecules, colloidal units. Vital phenomena moreover form only one stage on the ascending hierarchy of novel forms of relatedness which constitutes the evolutionary process. (b) In the holistic philosophy the emphasis is not so much on novelty as on the tendency toward the formation of wholes. It differs further from the emergent theory (as formulated by Lloyd Morgan) in refusing to regard the mental and the physical as correlated at all stages of evolution and in considering mind as characteristic only of a comparatively recent stage in the evolutionary order. Both theories, however, insist on the conception of types of unity or integration which are not the sum of their parts and are not deducible in any way from the character of their constituents either as occurring in isolation or as found in combination; on these premises must be rejected not only mechanism but also that form of vitalism which admits that apart from the intervention of a "vital force" living things act mechanically. (c) In Hobhouse's system the element of mechanism is given due place, but in living things it is regarded as qualified by teleological factors. The relation between mind and body is a relation between two modes of behavior and not between two substances. Teleology and mechanism are irreducible. Organism, on the other hand, is not a distinct category. The various forms of living things and their modes of behavior are explicable as due to varying combinations of the mechanical and the teleological factors. (d) Whitehead is more drastic and regards the whole conception of mechanism as applicable only to very abstract entities. Concrete enduring things are organisms in which the plan of the whole modifies the character of the subordinate or constituent organisms which enter into it. The principle of modification is not peculiar to living bodies but is perfectly general throughout nature. It is difficult to say how far physicists would go with Whitehead in his extension of the category of organism to all spheres of reality, and it is also difficult to ascertain whether the recent changes in physical theory really imply, as is frequently alleged, an

idealistic interpretation of reality. It remains true, however, that the rigidity and the primacy of the physical sciences have been shaken and that there is less confidence in the universality and necessity of mechanical explanation. One may quote the remark of Bridgman: "I believe that many will discover in themselves a longing for mechanical explanation which has all the tenacity of original sin. . . . [The physicist must] struggle to subdue this sometimes nearly irresistible but perfectly unjustifiable desire" (*Logic of Modern Physics*, New York 1927, p. 47).

The differences in point of view considered above naturally reappear in psychology. Corresponding to the mechanistic attitude are the epiphenomenalism characteristic of nineteenth century scientific naturalism, which regarded mental states as mere by-products or appearances having no real part in the effective order of nature; and now the behaviorist movement, which if not necessarily committed to philosophical materialism wishes to rid psychology of its subjective elements and methodologically at any rate to use only what can be outwardly observed. Corresponding to the vital force is the anima, or soul, whose states are supposed to be in a relation of parallelism or interaction with the bodily or neural processes.

Corresponding to what may be called non-substantial vitalism is the view of the mind as an emergent or novel form of wholeness (Lloyd Morgan and Smuts) or as an aspect or factor in behavior, namely the teleological, which in combination with the mechanical factor makes up its psychophysical organism (Hobhouse and C. S. Myers). The sharpest opposition is between those who regard mind as essentially purposive, conational or forward looking and those who regard purposiveness as merely apparent and as capable of explanation in terms of physiology or of a "stimulus-response" psychology. Compared with this cleavage the debate about instincts, that is, the existence of inherited and specific conational tendencies, is a relatively minor matter.

The sociological problems that arise in connection with the mechanist-vitalist controversy fall into two groups, those relating to (a) the unity of social aggregates and (b) the nature of social evolution. As regards the idea of unity, the applicability of the notion of emergent wholes to societies is hinted by Lloyd Morgan and has been further elaborated by Wheeler in his *Emergent Evolution and the Development of Societies*. But in a different form it is familiar to sociology. It was used by Wundt in his theory of the general will, by Durkheim in his theory of collective representations and by many others who conceive of the group mind as more than and different from the sum of its parts. There is urgent need of an adequate classification of the forms of social grouping. It is clear that they do not all possess the same type of unity, and many are not unities at all. Nevertheless, the notion of functional, or non-substantial, emergence may prove fruitful, at any rate provisionally.

In the discussion of social evolution recent thought has been concerned to rid itself of the assumption of a single line of development which dominated some of the earlier sociologists. Here as in recent biology polyphyletic evolution is increasingly emphasized, and there is also a marked tendency to abandon the search for origins and to concentrate on functional analysis. Despite recent criticism, however, the notion of development properly interpreted retains its value in sociology. There is a process of cumulative and correlated growth, and drifts of great depth and continuity can be traced in all the large scale movements of culture.

To determine the conditions of this correlated growth remains an important sociological task, even though or rather because it is now recognized that the process is not unitary or regular. There remains also the problem whether after all there is not some unity behind the complex and conflicting processes of human history. Hobhouse has tried to show on the basis of an elaborate survey of the different phases of social development that on the whole and despite far reaching divergencies ever widening syntheses are effected and that the process of unification is an integral part of the movement of progress; and he has put forward the hypothesis that this growing unity reflects the increasing power of mind, gradually obtaining a firmer grasp over the conditions of its development but as yet not completely in control over them.

Driesch maintains that in history there is only cumulation, that is, the formation of systems by additions and interactions, but not evolution in the strict sense. His argument, however, rests on the questionable assumption that there is evolution only where there is a "superpersonal entelechy" guiding and animating the entire process.

From a different point of view Troeltsch in his *Historismus und seine Probleme* (in *Gesammelte Schriften*, vol. iii, Tübingen 1922) dismisses the unity of mankind as "a metaphysical fairy tale" inspired by the tendency to regard the

line followed by European peoples as the main highway of history and to measure all other civilizations by the degree to which they approximate or have contributed to European civilization.

This warning is important, especially in relation to the ambitious "philosophies of history" favored in the nineteenth century. At the same time it is clear that Troeltsch exaggerates the uniqueness and independence of the different cultures. No doubt they do in varying degree follow their own bent, but they are never wholly independent and the influence of culture contact is one of the best attested factors in culture development. It is therefore of the greatest importance to investigate the forms of contact and the resulting syntheses or mutual modifications. A study of the evolutions of cultures is thus also a study of the evolution of culture.

MORRIS GINSBERG

See: METHOD, SCIENTIFIC; BIOLOGY; EVOLUTION; EVOLUTION, SOCIAL; PSYCHOLOGY; PHILOSOPHY; NATURALISM; MATERIALISM; IDEALISM; HUMAN NATURE; ORGANISM, SOCIAL.

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MEDEM, WLADIMIR (1879–1923), Jewish socialist. Medem was the son of a Jewish military doctor in Minsk, White Russia. As a child he was baptized a Christian and was trained in the tradition of Christianity. At the age of fifteen, however, when he was a student in the *Gymnasium*, he began to associate with Jewish socialists. He broke off relations with his family, devoted himself entirely to the cause of the Jewish labor movement and became one of the most important leaders of the Jewish Social Democratic party, known as the Bund. He was often arrested and was exiled to Siberia, whence he fled abroad and returned to Russia after the first Russian revolution in 1905; he subsequently spent several years in the prisons of Vilna, Warsaw and Moscow and was finally sentenced to four years of forced labor in the fort at Warsaw but was released in 1915 by the German troops who occupied the city. Medem was interested in the problem of nationality; at a time when most Jewish socialist leaders were inclined toward a vague cosmopolitanism or favored the cultural absorption of the Jews by the respective dominant nations Medem was one of the first to put forth the demand for cultural autonomy for the Jewish minority in countries with compact Jewish populations. He was editor of several publications issued by the Bund in Yiddish and Russian and published *Fun mein leben* (2 vols., New York 1923), reminiscences which are of great significance in the history of the Jewish labor movement. Medem was for many years a member of the chief governing body of the Bund and participated as its delegate at the congresses of the Russian Social Democratic Workers' party and also at the International Socialist Congress of 1910 in Copenhagen. After the October revolution in 1917 he strongly attacked Bolshevism and on this account separated from his party, which became communistic. He moved to the United States and died in New York.

JAKOB LESTSCHINSKY

Consult: *Roiter pinkos* (The red book), 2 vols. (Warsaw 1921–24) vol. ii, p. 175–76; Michalevitsch, B., and Shulman, V., in *Arbeiter luach*, vol. v (1924) 117–41; Reisen, S., *Leksikon fun der yidisher literatur*, 4 vols. (2nd ed. Vilna 1926–29) vol. ii, p. 441–50.

MEDIAEVALISM. *See* ROMANTICISM; PRIMITIVISM.

MEDIATION is the action of one or more states in suggesting to two or more disputing states a possible form of settlement of their dispute. The action may occur in peace time or during war between the disputants. The suggestion of a form of settlement by one of three or more states involved in a dispute may be included—the United States so acted in 1918—but not the suggestion of one state to another in a strictly bilateral controversy. The absence of any obligation to accept the suggestion made is an essential element in the situation.

Mediation thus rises one stage higher than good offices and remains one stage below arbitration or adjudication. In the former mode of procedure the third state confines itself to promoting communication between the disputants without making any reference to the subject matter of the controversy. In the latter the third state—or individuals not acting for either disputant—is authorized to prescribe the form of settlement and the disputants are bound to accept this decision. Mediation, however, resembles good offices and perhaps arbitration in that the suggestion made need not embody international law or justice.

Mediation grows out of simple diplomacy. Any state may make representations to another state on any matter of importance to itself which is affected by or affects the second state. Thus there is no obvious ground for mediatory action where the subject of dispute does not concern the mediator; for this reason mediation has been resisted at various times both in principle and in practise. The interest of the third state in seeing averted any grave impairment of friendly relations and peace among its fellow members of the international community has been held, however, where the facts justify such apprehension, to constitute the interest necessary to justify representation, including a suggestion of a settlement.

Mediation may in fact and in law be utilized to some extent in connection with intervention. While most actions of intervention are taken by one state toward a second individual state they may also take the form of mediation between the second state and a third, although if imposed by the first state upon either or both of the others the action would exceed the character of simple mediation, in which both the suggestion of a settlement and the proposed terms of settlement may freely be accepted or rejected by the disputants.

The action of mediation may be initiated upon the request of one or more of the parties to a dispute. In such circumstances the third state may consent to serve or decline; likewise if one disputant requests the action and the third state is willing to serve, the other disputant or disputants may refuse to receive or consider the representations of the mediator unless the interests of the latter are affected. Conversely the initiative may be taken by the third state within similar limits of principle.

The action of the mediator is ordinarily prolonged until it amounts to repetition and revision of the suggestion for a settlement. The process of mediation may thus become seriously protracted and involved. The mediating state may well become a participant in consideration of questions and interests of which it was originally ignorant and with which it had no concern.

When the suggested formula has been accepted by the parties to the dispute it becomes binding upon them, whether given the form of treaty agreement or mere diplomatic understanding. Each party then has the right to employ all means recognized by international law for exacting respect for national rights—diplomatic demand, litigation, force short of war, war—within the limits of any treaty agreements restricting such action. But in the absence of special arrangements the mediator has no more power or right of enforcement in this connection than has the international community as such.

Attempts have been made in more recent years to lay foundations by treaty agreement for subsequent practise of mediation. States have pledged themselves to permit and to accept mediation in disputes in which they are concerned and, conversely, to offer and perform mediation when needed. The preservation of peace has been recognized as a matter of concern to every state and hence as a justification for mediation. Detailed procedure for investigating disputes, making suggestions of settlement and even, finally, for enforcing the formula suggested has been provided, although the last step seems to carry the action into the range of arbitration and something still higher; namely, international government. Such steps have been taken in numerous bilateral treaties, such as the Bryan peace treaties; agreements among the members of small groups of powers, such as the Treaty of Paris of March 30, 1856; and also in broader multilateral conventions, such as the Hague Convention for Pacific Settlement of International Disputes (arts. 2–8) and the Covenant of the League of Nations (arts. 11–16). When re-

garded from without, as a form of action for settlement of disputes, often performed by an international commission or organ such as the League Council, rather than from within, as an action of a mediating state, mediation is referred to as conciliation.

Historically mediation has been undertaken and accepted or rejected for a variety of motives apart from a desire to preserve peace. Third states have so acted with a view to seeing a certain solution adopted in a controversy between neighbors. Weak disputants have invoked mediation in order to gain support from the mediator against a stronger adversary. Strong disputants have sought mediation to justify imposition of a desired settlement upon a weaker state; for a state to be able to utilize mediation in this way the settlement sought must accord rather closely with international law. But the motive of preserving peace and escaping war, itself a motive of national interest of course, has been the most frequent cause of mediation in later years.

In the same way the use of pressure to secure acceptance of mediation and compliance with the formula suggested has varied and has occurred as often, in later years at least, in connection with mediation motivated by desire to preserve peace as it has in connection with mediation aimed at the terms of the settlement itself. The mediations of the Concert of Europe in the Balkans, of the United States in Latin America, of the western powers in the Far East, have been the product of a mixture of motives selfish and generous and have been accompanied by the use of pressure varying from zero to complete compulsion.

A variety of factors condition the probable success or the acceptability of mediation. Two weak states intimidated by and desiring to keep the favor of a great power are likely to accept the mediation of the latter and to act accordingly, as did Panama and Costa Rica in 1910; on the other hand, these same weak powers may on occasion, as in 1921, resist such action to the utmost. Two great powers or two groups of powers equally confident in their strength, such as the Entente and the Alliance on the verge of the World War, are not likely to be amenable. Japan demonstrated in 1931 that a strong state in position to exact from a weaker state a settlement satisfactory to itself will react in a similar manner. A state at the moment victorious but doubtful of its own ability to hold out and finally to secure a satisfactory settlement may prefer to escape by this path, as was the case with Japan in 1905. When two states have more or less inadvertently become involved in a sharp controversy although neither wishes to be drawn into war—as, for example, Chile and Peru in 1926—they may be glad to yield to mediation. A community of states determined to prevent the outbreak of war will insist upon the employment of mediation, as did the League of Nations in the Balkans in 1925. Many other examples might be given to illustrate the general and obvious principle that because of its voluntary character the success or failure of the process of mediation depends upon the circumstances and the moods of the disputants.

Obviously the organization of mediation or conciliation should prevent the errors and abuses to which the practise is susceptible. These include failure to apply the procedure promptly when needed, refusal of the practise by prospective object states, sustained resistance to the suggested formulae of settlement with a view to defeating the operation of the process, employment of the practise by the mediator for purposes injurious to the object states, failure to respect a settlement agreed upon and failure to provide means of enforcement. This suggests that foundations for mediatory action should be provided in standing agreements which would avoid the necessity of securing consent when the action is needed, that commissions or other agencies should be immediately available to obviate the delay incident to selecting a mediator, that the process should be applied by the international community or agencies representing that community rather than by individual states, and that the machinery and procedure of conciliation should be integrated with any existing system of sanctions or international enforcement. Many of these conditions are actually being fulfilled in practise.

Mediation or conciliation is important in the field of international relations, in contrast to the situation among individuals, because of the still great although declining inclination of states to assert what they believe to be their interests and even to take violent action against one another. Moreover the greater cost and danger of armed conflict today, the relative dearth of accepted international law limiting national interests or defining national rights, the lack of international administrative machinery and of adequate law restricting the states in asserting their interests and rights against one another, all contribute to the necessity for mediation. It must be obvious, however, that certain serious defects are inher-

ent in the process. Even when organized as suggested above it still remains nothing more than an attempt to adjust political demands or, even where the demands are allegedly based upon international law, a search for a form of settlement not necessarily cast in terms of accepted law. At best it is a legislative rather than a judicial process, carried on only with the consent of the object states and hampered thereby, unless raised to the level of joint intervention and international government; in either case it is special ad hoc legislation with all the vices entailed therein, such as lack of general standards and necessary repetition. So long as this is true, international enforcement of recommended settlements must be hazardous and hesitant. That mediation has of late been more frequently practised or at least more frequently stipulated in international agreements and organized on broader and more effective lines is indicative primarily of an increased desire to escape war; if justice were the predominant goal in the conduct of international relations, not mediation but development of law and adjudication according to law would be sought. Mediation may be expected eventually to disappear from the practises of international organization; today it is one of the two most important and valuable of those practises.

PITMAN B. POTTER

See: INTERNATIONAL RELATIONS; INTERNATIONAL ORGANIZATION; DIPLOMACY; ARBITRATION, INTERNATIONAL; PEACE MOVEMENTS; INTERNATIONALISM; LEAGUE OF NATIONS; GREAT POWERS; INTERVENTION; WAR; AGREEMENTS, INTERNATIONAL; TREATIES.

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MEDIATION, INDUSTRIAL. *See* CONCILIATION, INDUSTRIAL.

MEDICAL JURISPRUDENCE,

forensic or legal medicine, is that science which applies expert medical and cognate scientific knowledge to the elucidation of those problems with which legal authorities are confronted. It also deals with the legal responsibilities and privileges of the physician and with the legal enactments and ethical considerations which particularly concern him in relation to his practise and to his fellows.

In addition to a general scientific knowledge the medical jurist must have considerable special knowledge to fit him to undertake the investigations required by the law. One of his most important duties is to give a decision as to the cause of death when there is doubt whether death was due to natural causes or to accident, suicide or murder. He must be familiar with the various changes that occur in the body after death and be able not only to deduce from these the approximate time of death but also to distinguish between such changes and those caused by violence before death. He must be acquainted with the developmental changes in the body from birth to old age in order that he may be able to give an opinion about the age and sex of unidentified remains and otherwise to aid in identification. It is essential for him to have an accurate knowledge of the infinite variety of wounds, the manner of their infliction, the nature of the weapons which caused them and the age of wounds and of scars. He must be especially familiar with wounds caused by firearms and he must be able to help in determining the kind and caliber of weapon and the direction and distance of fire. He must have an expert knowledge of the technique for the examination of blood and other stains to be able to prove their nature and origin. It is his province to deal with many varieties of sexual matters and problems connected with marriage, divorce, pregnancy, childbirth, abortion and infanticide. Since he may be required to deal with claims for compensation after injury and with cases of industrial disease and poisoning, the whole field of toxicology must come within his purview. Although the isolation and detection of poisons should be actually carried out by specially trained chemists, the medical jurist in order to be able to cooperate with them must have a thorough knowledge of the symptoms, signs and pathological effects of the various poisonous substances. Finally, since he may be called upon to decide whether a psychiatrist should be consulted, he must keep in touch with the subject of mental disease.

It may be asked whether any one man can possibly have all the specialized types of knowledge required by the medical jurist. The answer is obvious, for no single individual can acquire expert knowledge of all the branches of science which contribute to legal medicine. The medical

jurist, however, must have special knowledge concerning the application of those sciences to the problem under consideration and he must be able to advise about the choice of a specialist in a particular branch when required. In this way the chemist, the physicist, the botanist, the anatomist, the surgeon, the obstetrician, may be called upon to aid in a particular problem. Similarly the specialized knowledge of tradesmen of various kinds may be required. It is the function of the medical jurist to act as the liaison officer between the various specialists and the investigating or juridical authority.

It is difficult or impossible to obtain an idea of the early development of forensic medicine, for its origin lies far back in antiquity; so intimately is this science associated with human conduct that its development may be considered coeval with that of the social development of man, and particularly with the recognition or punishment of crime. In the days of the early Egyptians there are few allusions to the part played by physicians in the detection of crime, but there appears to be no doubt that there was a certain knowledge of poisons. The Jews made a distinction between mortal and dangerous wounds and had laws relating to virginity, marriage, adultery and other subjects of public medicine. There are few traces of the union between law and medicine in the works of the ancient Greek physicians. There are certain references to hygiene and state medicine scattered through the writings attributed to Hippocrates, some speculations on the nature and growth of the infant and on the period of pregnancy. Medical men were consulted by the magistrates most frequently on questions of public health and there is some evidence that they were commonly summoned to give evidence in courts of justice.

The laws of ancient Rome had their chief source and inspiration from those of Greece and were similar to them but they embraced more important medicolegal questions. In the reign of Numa Pompilius, six hundred years before the Christian era, it was enacted that the bodies of all women who died during the last months of pregnancy should be opened immediately, so that the infants might be saved if possible (*Dig.* 11,8,2). Scipio Africanus and the first Caesar were brought into the world by incision of the abdomen, hence the origin of the term, Caesarean operation. It was also enacted in the Twelve Tables that the infant in the mother's womb was to be considered as living and that all civil rights were to be secured to it. The legitimacy of an infant was limited to birth within ten months of the death or absence of his putative father.

Many laws were promulgated during the reigns of Hadrian, Antoninus, Marcus Aurelius and Septimus Severus on the authority of Hippocrates and Aristotle. It is recorded by Suetonius (*Julius* lxxxii, 2–3) that the bloody remains of Julius Caesar when exposed to public view were examined by a physician named Antistius, who declared that out of twenty-three wounds which had been inflicted one only, which had penetrated the thorax, was mortal. The body of Germanicus was also inspected, and by indications conformable to the superstitions of the age it was decided that he had been poisoned. It does not appear that there was any positive law which required the inspection of wounded bodies by medical practitioners or that legislators required medical opinions before making laws. It is, however, recorded that by the beginning of the empire the midwives were ordered by the praetors to examine pregnant women in judicial inquiries. Galen (129–*c.* 199 A.D.) alluded to some questions of legal medicine: he remarked the difference which subsists between the lungs of an adult and those of the foetus, admitted the legitimacy of seven-months children and suggested a manner of detecting simulated disease.

The origin of the connection between the sciences of law and medicine in European law may be dated from the publication of the codification of Justinian (529–33), which required the opinion of physicians in certain cases. But from the period when the Roman Empire was overrun by the Goths and Vandals savage customs prevailed in the west of Europe and the principles of legal medicine were totally neglected, although here and there appeared a provision for taking the testimony of a physician in isolated cases, as in the laws of the Alemanni of the sixth century. Thus too Pope Innocent III decreed in 1209 that wounds were to be examined by a physician.

The modern beginnings of forensic medicine are, however, usually traced from the early part of the sixteenth century, for it was in 1507 that the bishop of Bamberg drew up a penal code in which the services of medical men were required to be utilized in all cases of violent death, a provision that was adopted almost immediately in Bayreuth, Anspach and Brandenburg. The other states of Germany resisted the introduction of the *Bambergensis* for a long period, but eventually Charles V in the Diet of Ratisbon in

1532 proclaimed as the law of the empire the criminal code since known as the *Constitutio criminalis carolina*. Like that of Bamberg, on which it was founded, this code, first published in 1553, required the evidence of medical men in all cases where their testimony could enlighten the judge or assist the investigation, as in cases of personal injuries, murders, pretended pregnancy, abortion, infanticide, hanging, drowning or poisoning. The publication of the *Carolina* very naturally attracted considerable attention and its provisions were soon copied by neighboring countries. In 1606 Henry IV of France authorized the appointment of two surgeons in every city and important town, whose exclusive duty it should be to examine all wounded or murdered persons and make reports thereon.

The promulgation of these new laws and the status accorded to medical men in the administration of the criminal law had the natural effect of directing attention to that new department of medical science. Many practitioners began to study forensic medicine and with its development a number of books were published bearing upon it. One of the earliest works was that by Ambroise Paré, which was published in 1573; this was followed in 1602 by a much more complete and comprehensive textbook by Fortunatus Fidelis of Sicily. The rapid progress of medical science in the seventeenth century, due especially to the work of Sylvius, Fallopius, Vesalius and Eustachius, led to similar advances in forensic medicine and to the publication from 1621 to 1635 of the classical work of a Roman physician, Paolo Zacchia, which dealt in considerable detail with the whole subject of legal medicine.

Although Italy undoubtedly led the way in placing forensic medicine upon a firm foundation, the science owes much to the critical investigations carried out in Germany and in France. The earliest important treatise in Germany was written in 1689 by Johannes Bohn, who in 1704 produced a more comprehensive and enlarged work. The famous pandects of Valentini (*Corpus juris medico-legale*, Frankfort 1722), in which the current knowledge of forensic medicine was ably summarized, was by many considered to be equal in importance to the work of Zacchia. Numerous books were published in German countries in the eighteenth century; among these should be mentioned the work in six volumes by Michael Alberti of Halle in 1725–47, the many works of Anton Störck on poisons, the work in three volumes of Albrecht von Haller in 1782–84 and the work of J. J. Plenck of Vienna in 1781. In the same period French writers published many works; the most important were those of François Emmanuel Fodéré in 1799 and 1813; the latter was probably the most important contribution up to that date. In 1813–15 France again contributed to the advance of the science of forensic medicine by the publication of M. J. B. Orfila's great work on toxicology.

During this period chairs in forensic medicine were established in Germany, France, Italy, Austria and Poland and in many centers it became a regular subject of instruction in the medical curriculum.

In Great Britain little interest was taken in the subject as a separate division of learning and such investigations as were made were in the general field of medicine and surgery. A small book was published by William Dease of Dublin in 1783 and another by Samuel Farr of London in 1788, but neither of these was of any particular importance. In 1816, however, Male of Birmingham was the author of the first systematic book which had any pretentions to completeness, and this was followed in 1821 by another important book by John Gordon Smith. In 1829 Sir Robert Christison of Edinburgh issued his work on toxicology, which although it showed the influence of Orfila, under whom Christison had worked, was in advance of all previous studies. After this period a number of textbooks appeared, the most important of which were that of Michael Ryan in 1831 and the advanced and comprehensive work of Alfred Swaine Taylor in 1836; the latter when completed in subsequent issues took its place as the most authoritative work in the English language, a position which it still retains.

Forensic medicine was not taught in Great Britain until about the year 1791, when the elder Andrew Duncan, a professor at Edinburgh University, began a series of lectures. Some years later in 1807 the first chair of forensic medicine in Great Britain was instituted by George III in the University of Edinburgh, its incumbent being Andrew Duncan the younger. In the following years medical jurisprudence was taught as a special subject in many schools; chairs were established in certain of the universities, and in 1833 it became an obligatory subject of study for all medical students in Great Britain.

Since the literature of the United States was mainly derived from British sources, the American development of forensic medicine followed along similar lines. As early as 1810 Benjamin

Rush delivered a lecture in the University of Pennsylvania in which he emphasized the importance of the study of medical jurisprudence. The first course of lectures on the subject was given by James S. Stringham in 1804 at Columbia College. Courses were soon established elsewhere: at the College of Physicians and Surgeons of New York (here James S. Stringham continued the Columbia College course); at the University of Pennsylvania by Charles Caldwell; at Harvard University by Walter Channing; and at the Western College of Physicians and Surgeons in New York state by Theodoric R. Beck, who published in 1823 a most complete manual of medical jurisprudence, which became the standard textbook in the United States and attained a high reputation in the British Isles.

The value of the specialized study of forensic medicine became so obvious in the nineteenth century that separate medicolegal institutes were founded in most of the countries of Europe. These institutes were commonly associated with the universities and controlled by the professor of forensic medicine. They kept, however, in close touch with the judicial authorities, made the necessary examinations of injured persons, investigated cases of violence to the person and performed postmortem examinations of the bodies of those who died in suspicious circumstances. The usefulness and the scope of these institutes have steadily increased. As a general rule persons skilled in analysis are on their staffs to carry out the analytical investigations in cases of poisoning and the like; and facilities for histological, microscopical and serological examinations are available as well as equipment for modern X-ray and electrical diagnosis.

In Denmark the professor of legal medicine is chairman of the Superior Board of Legal Medicine appointed by the government and medicolegal expert to the courts of justice. All legal autopsies in the country are required to be made either at the institute or by a special state dissector. The fact that the whole of the laboratory work for legal purposes in Denmark is performed in the institute is of great advantage to the state and of inestimable benefit in the training of members of the medical and legal professions. Thus in Denmark an institute originally intended for university instruction has become a center for medicolegal and scientific police investigation of every kind throughout the country.

Similar conditions, varying according to the different systems of law, prevail in most other European states. In Egypt the medicolegal institute is a state department. The staff of the central laboratories in Cairo, all members of which are full time civil servants, consists of specially trained medical men and qualified analysts; and facilities are present for all varieties of special diagnoses and for every type of scientific investigation of medicolegal cases.

No medicolegal institutes exist in England. The investigation of cases of sudden, violent or unexpected deaths is the function of the coroner, who may appoint any medical practitioner to perform an autopsy or such other examination as he thinks fit. There is no law which requires special qualifications for medicolegal investigations. In practise, however, most of the laboratory work is entrusted to specially qualified persons. Injuries, assaults and similar cases are investigated as a rule by the police surgeons and many of these have by experience become highly expert in this branch of legal medicine. Even the Criminal Investigation Department in Scotland Yard retains no scientific experts on its staff, and there is no arrangement by which the mass of medicolegal material in London may be made available for teaching and research.

In Scotland, where the legal system is different from that in England, there is no public inquiry into deaths but an official known as the procurator fiscal privately investigates all cases of sudden and violent death and reports to the Lord Advocate's Department the result of his inquiry. This official has authority to call upon any medical practitioner to make such examination as he requires. Although there are no special medicolegal institutes there are well equipped departments of forensic medicine in the Scottish universities and these offer the authorities full facilities for scientific criminal investigation.

Conditions in Canada are even less favorable than in Great Britain. Legal medicine has little if any standing and is not taught as a separate subject in most of the Canadian schools. The tendency has been to group it with pathology; this would have many advantages if greater cooperation were to exist between the medical schools and the coroners and if a special course in legal medicine were to be provided within the schools.

Nor do medicolegal institutes exist in the United States; as a subject of study forensic medicine has not received the attention which one would have expected in view of the progressive outlook in most branches of science in that country. The conditions of teaching and

practise show signs, however, of improvement. In certain localities, such as Boston and New York City, the coroner system of inquiry into sudden and violent deaths has been superseded by the appointment of medical examiners. The change was made in Boston in 1877 and in New York in 1918. The present system places the responsibility of ascertaining the cause of death upon the medical examiner and the legal responsibility upon the courts. At the present time the office of the medical examiner of New York City fulfils many of the functions of a medicolegal institute but without proper facilities. This officer investigates all cases of death from violence whether accidental, suicidal or homicidal; all cases of death from criminal negligence, criminal abortions and the like. He has also important functions with reference to compensation claims. There are no special laboratories belonging to the service but accommodation is obtained at the Bellevue Hospital and at the city morgues. Between two and three thousand autopsies are performed annually and about twenty thousand chemical analyses, including routine examinations for methyl and ethyl alcohol. Although there is thus ample material for teaching and research, there is insufficient coordination between the medical schools and the office of the medical examiner in connection with teaching, and the great supply of available medicolegal material has so far as this purpose is concerned been allowed to go to waste. Since, however, the medicolegal work has been centralized it only requires coordination and greater facilities to enable a great extension to take place in research and teaching, and when this is achieved New York City should become a world center for medicolegal study.

Within the past decade considerable advances have been made in many parts of the world in forensic medicine. The scientific investigation of firearm injuries has been taken up in most countries and especially in the United States. The identification of projectiles and the weapons from which they have been fired has reached a high degree of accuracy, as has the identification of traces of powder and metallic débris about wounds. Marked advances have occurred in the examination of bloodstains and the identification of the source of blood. Landsteiner and his coworkers have advanced the knowledge of the agglutinins of the blood, and not only has the identity of four groups and two subgroups been definitely established and a technique evolved for identification of the group of dried stains but the adaptation of the test to the diagnosis of paternity has been made more certain. Further work on the specific group agglutinins of blood, on seminal secretions and various tissues is actively being carried on, and in time no doubt it will be possible readily to distinguish between male and female blood and to devise a test to prove the individuality of bloodstains. The use of X-rays, ultraviolet and infra-red rays is advancing as a valuable aid in investigation. A large number of experiments involving the examination of the blood and urine for alcohol have furnished a new means of dealing with cases of drunkenness, and the test should now be applied to every case of death from unknown causes. Examination of the blood for gaseous poisons including carbon monoxide has also advanced considerably within the past few years, and no doubt blood examinations will be greatly extended in the future.

There are still enormous fields for research; and since every medicolegal case involves the possibility of the loss of life or liberty of a human being and since the whole of the work of forensic medicine is of intense social interest and importance, it is obvious that each year the importance of this branch of science must increasingly force itself upon the public mind and that in time no person without special training in forensic medicine will be entitled to give evidence in a court of law on a medicolegal problem.

SYDNEY A. SMITH

See: MEDICINE; CRIMINAL LAW; PROSECUTION; EXPERT TESTIMONY; EVIDENCE.

Consult: The literature on medical jurisprudence is extremely voluminous. The present bibliography includes only some of the leading treatises of which there are editions published in the present century. These usually contain ample references to the older literature. Some of the leading English treatises are: Glaister, John, *A Text-book of Medical Jurisprudence and Toxicology* (5th ed. Edinburgh 1930); Lucas, Alfred, *Forensic Chemistry and Scientific Criminal Investigation* (2nd ed. London 1931); Lyon, I. B., *Lyon's Medical Jurisprudence for India*, ed. by L. A. Waddell (8th ed. Calcutta 1928); Smith, F. J., *London Hospital Lectures on Forensic Medicine and Toxicology* (3rd ed. by G. Jones, London 1929); Smith, S. A., and Glaister, John, *Recent Advances in Forensic Medicine* (London 1931); Taylor, A. S., *Taylor's Principles and Practice of Medical Jurisprudence*, 2 vols. (8th ed. by S. A. Smith, London 1928). Some of the leading American treatises are: Hamilton, A. McL., and others, *A System of Legal Medicine*, 2 vols. (2nd ed. New York 1900); Herzog, Alfred W., *Medical Jurisprudence* (Indianapolis 1931); Kessler, Henry Howard, *Accidental Injuries; the Medico-legal Aspects of Workmen's Compensation and Public Liability* (Philadelphia 1931); *Legal Medicine and Toxicology by Many Spe-*

cialists, ed. by F. Peterson, W. S. Haines, and R. W. Webster, 2 vols. (2nd ed. Philadelphia 1923); Webster, R. W., *Legal Medicine and Toxicology* (Philadelphia 1930); Wharton, F., and Stillé, M., *Wharton and Stillé's Medical Jurisprudence*, 3 vols. (5th ed. Rochester 1905); Witthaus, R. A., and Becker, T. C., *Medical Jurisprudence, Forensic Medicine and Toxicology*, 4 vols. (2nd ed. New York 1906-11). The leading German treatises at present are: Hofmann, Eduard von, *Lehrbuch der gerichtlichen Medizin*, 2 vols. (10th ed. by Albin Haberda and Julius von Wagner-Jauregg, Vienna and Berlin 1919–23); *Handbuch der gerichtlichen Medizin*, ed. by A. Schmidtmann, 3 vols. (Berlin 1905–07), being the 9th ed. of J. L. Casper's famous work, tr. by G. W. Balfour, 4 vols. (London 1861–65). The leading French works, such as those of A. A. Tardieu and P. C. H. Brouardel, deal with special phases of medical jurisprudence. References to other continental works may be found in the English and American works already cited. The Rockefeller Foundation has published a survey of the institutes of legal medicine which also contains much information on the general history of medical jurisprudence, *Institutes of Legal Medicine*, Methods and Problems of Medical Education, ser. 9 (New York 1928).

MEDICAL MATERIALS INDUSTRY. Although the specific values of some drugs were known independently of the magical practises commonly associated with their use in earlier societies, scientific knowledge of the use of drugs may be said to date from Hippocrates. Dioscorides and Galen made the outstanding ancient contributions in the field of materia medica, and their works remained the primary authorities on the subject for many centuries. The lay apothecary did not acquire status until the development of Arabic science and pharmaceutic art; the separation of pharmacy from medicine was recognized in the eighth century. Noteworthy among the attempts to define the function and regulate the services of apothecaries was that in the constitution put in force by Frederick II in Sicily about 1241; this constitution classified the pharmacists into two groups—the *stationarii*, who sold simple drugs and preparations, and the *confectionarii*, who dispensed the prescriptions of physicians—and placed all pharmaceutical establishments under the surveillance of the college of medicine at Salerno. The first association of pharmacists was organized in Bruges in 1297; in the following centuries those engaged in the preparation of medicines gradually came to be considered as performing an independent specialized function of public health service.

The manufacture and distribution of drugs and medicines are now universally recognized as professional procedures. At the same time the commerce in crude materials entering the production of drugs and medicines, the business relations between manufacturers, wholesalers, retailers and consumers and the fact that medicines are commodities bring into the medical materials industry all of the usual manifestations of trade. Manufacturers, retailers, advertising men and promoters of various drugs openly compete with one another and with the medical profession in the diagnosis and treatment of disease and through specious claims entice consumers to try advertised panaceas. Control over the products of the medical materials industry therefore becomes imperative as a public health measure. Regulations designed to eliminate frauds have nevertheless been established with difficulty and the necessary authority for enforcement is as a rule grudgingly provided because of the reluctance of most governments to interfere with business. The paradox frequently arises whereby a government department of commerce actually engages in fostering trade in medicines which are frowned upon by health departments. Federal and state laws (*see* FOOD AND DRUG REGULATION) have therefore been less stringent and less effective than the private control exercised by professional medical organizations. In the United States the Council on Pharmacy and Chemistry of the American Medical Association has set up standards with which a product must comply before it can obtain the stamp of approval which places it in the class of certified remedies: it must have a history of usefulness established by clinical evidence and laboratory examination, must meet exacting tests for purity and uniformity and must not be advertised to the laity. Chemical formulae, patents and tests must be revealed to the council, which publishes them annually. The council does not object to distinctive trade names coined by manufacturers to identify their particular brand of a standard product, if such names are indicative of the composition of the product; the names must not, however, indicate therapeutic action. In other countries there are comparable agencies which function in the same capacity as does the council. In most Latin American states manufacturers and distributors of pharmaceutical products must be licensed; detailed information regarding the products must be presented before a license is issued. Most countries seek to maintain strict control over the manufacture of biological products through public health departments, which issue licenses only to well equipped laboratories and make periodic tests to assure competence on the part of the manu-

facturer. In recent years some research workers have patented their discoveries and have given the control of the manufacture of the products to foundations, which require the licensed manufacturers, carefully selected on the basis of competence, to submit samples of each lot for test purposes. The control over the manufacture of insulin exercised by the University of Toronto and that over viosterol by the Alumni Research Foundation of the University of Wisconsin are examples of this rigid method of assuring standards, which has been attacked by organizations that have suffered financially through its functioning.

When manufacturers develop new therapeutic agents they find it more difficult to obtain satisfactory clinical trial than when the remedial agent is produced in a university laboratory, especially where the university has a medical school which is in a position to cooperate; manufacturers therefore endeavor to foster close relations with university laboratories. Transfer of the production of a newly discovered therapeutic agent from the university experimental laboratory to the factory is often effected by purchase of the product or by the employment of the discoverer. Sometimes a scientist on the verge of the discovery of an important remedial agent is persuaded to change his base of operations to the manufacturing laboratory in time to give the manufacturer the full benefit of the publicity attending the announcement of the discovery.

National pharmacopoeias, prepared in most countries under governmental auspices, in which the standards for medical materials are carefully outlined and formulae for the production of standard preparations are given, are published for the purpose of maintaining uniform standards for potent remedies. In the United States the national pharmacopoeia first appeared in 1820 and has since been revised at ten-year intervals by a convention of physicians and pharmacists which formulates policies and a revision committee made up of physicians and representatives of pharmacy and allied sciences. The standards of the pharmacopoeia have the force of law because the federal Food and Drugs Act recognizes the pharmacopoeia as an official standard for the drugs and medicines listed. Efforts at international cooperation in the formulation of drug standards have been made and several international conferences have been held, which have resulted in the adoption of uniform standards for certain potent drugs and preparations. The League of Nations through its health committee has recently assisted in formulating such international standards.

The vegetable drug industry, usually referred to as the crude drug industry, supplies the manufacturers of pharmaceuticals with the drugs from which tinctures, fluid extracts, solid extracts and active chemical principles in the form of alkaloids, glucosides and other complex organic compounds are derived. The crude drugs are gathered in their native habitats and are shipped to centrally located crude drug houses, where they are carefully graded and sold directly to manufacturers either whole or ground. Large manufacturing concerns deal directly with growers or gatherers of such crude drugs as they may require in quantity. Some crude drug houses and manufacturers maintain farms in their own countries for cultivating drugs; it has not been found profitable, however, to cultivate drugs in competition with the supply from areas where the plants are native and where labor for harvesting can be obtained cheaply. Crude drug imports to the United States totaled $8,800,000 in 1930. Manufacturers of bulk chemicals supply both inorganic and organic chemicals in large quantities to the drug manufacturers. Animals for the manufacture of serums, vaccines and other bacterial products are procured from breeders and germ cultures from hospitals. The meat packing industry is depended upon to furnish glands and organs for glandular extracts and preparations and for the various hormones and digestive ferments. The fishing industry supplies livers of cod and halibut from which the respective oils containing vitamins are extracted.

Manufacturers of drugs and medicines may be classified into three general categories according to their major activity: first, those who produce standard non-secret preparations and specialties which are intended to be dispensed only upon the prescriptions of physicians; second, physicians' supply houses, which manufacture standard formulae to be dispensed by physicians directly to their patients; and third, patent medicine manufacturers, whose products are frankly intended for direct sale to the public. The first group, often designated as ethical manufacturers, also frequently supply physicians and make patent medicines. In 1929 sales by manufacturers of druggists' preparations, including patented products as distinct from patent medicines as well as non-secret home remedies, totaled $125,000,000 in the United States. In the same year sales of patent or pro-

prietary medicines by manufacturers amounted to about $155,000,000; the sales by specialty manufacturers totaled approximately $57,000,000; and the total sales by manufacturers of all types of medicines amounted to about $337,000,000, whereas in 1914 the last amounted to only $134,000,000. The total costs of medicines to the consumers of the United States in 1929 is estimated to have been $715,000,000; $190,000,000 of this amount was spent for physicians' prescriptions compounded by pharmacists, including medicines dispensed by physicians and hospitals; $165,000,000 was spent for non-secret home remedies; and $360,000,000 for patent medicines. In 1929 the 1522 establishments manufacturing patent medicines employed 16,434 wage earners and the 429 establishments producing other pharmaceutical products employed 10,688 wage earners. In the first group wages represented about 6 percent of the value of the products and materials about 29 percent; in the second about 10 percent of the value of the products was represented by wages and about 35 percent by materials.

Exports of medicines from the United States were approximately 6 percent of the total national production in the decade between 1920 and 1930; in 1930 they totaled $16,500,000, 44 percent of which represented trade with Latin America and 6 percent trade with Canada. Imports of finished medicines were about 1 percent of total manufactures. Both Germany and the United Kingdom are larger exporters of prepared medicines than is the United States; in 1929 Germany exported about 12 percent of a national output of $156,000,000, and the United Kingdom in 1927 exported 15 percent of a total production of $72,000,000.

Ownership and control of the manufacture and distribution of drugs are highly concentrated, especially in the United States. McKesson and Robbins, Inc., organized in 1928 as a holding company to manufacture drugs, chemicals and pharmaceutical products, had total net sales of $134,865,000 in 1930 and net operating profits of $3,460,000. The company owns substantially all the common stock of many wholesale distributing companies. Drug, Inc., a holding company organized in the United States in 1928 through a series of mergers and combinations of manufacturing and distributing agencies covering the medicinal, chemical and pharmaceutical fields, had a total sales volume in 1929 estimated at $175,000,000. It operates more than 1500 chain retail drug stores in the United States and foreign countries, controls the distribution of certain proprietary products through 10,000 others and markets to other retail drug stores widely known patent medicines and non-medical products manufactured in its own subsidiary factories. The United Drug Company of Boston, a part of the Drug, Inc., merger, controls about 700 Liggett Drug Stores in the United States and about 900 Boots Drug Stores in England. The sales of Parke, Davis and Company total from $35,000,000 to $40,000,000 annually; in 1929 the company showed a net income of $8,381,000.

State and municipal governments have entered the drug market with the manufacture of serums and vaccines; such products as diphtheria antitoxin, for example, are manufactured in some states and municipalities under the direction of health departments and are distributed at cost to public hospitals and for use in immunizing school children against various contagious and preventable diseases.

There were approximately 500 wholesale druggists operating throughout the United States in 1929; most of these were located in large cities and important trading centers, and each served retail drug stores usually within a radius of one hundred miles. The total annual business of wholesale distributors of the drug trade amounts approximately to $1,000,000,000, about 35 to 40 percent of which accounts for sales of drugs and medicines, while the remainder represents sundry merchandise.

Both retail dealers and manufacturers are extending their activities to absorb the functions originally performed by the wholesale druggists. Chain stores are able to obtain complete stocks of goods through direct negotiation with manufacturers and to maintain warehouses at strategic points to supply their various units. Groups of independent drug stores have organized wholesale companies to serve their needs in a given territory and thus obtain merchandise at prices which enable them to compete more readily with chain store organizations. This has led in turn, especially in the United States, to cooperative action of independent wholesale firms and to the organization of a chain of wholesale distributing companies.

In the British Empire physicians' prescriptions are compounded and drugs are sold at retail in chemists' shops but patent medicines may be obtained elsewhere. In continental Europe the number of pharmacies is restricted according to the size of the population, and the

compounding of prescriptions as well as the sale of drugs is more carefully regulated than in the United States and Great Britain; patent medicines and packaged domestic remedies may, however, be sold through agencies not supervised by qualified pharmacists. In the United States approximately 90 percent of all drugs and medicines is distributed to the public through supervised pharmacies, of which there were 60,000 in 1929. The development of machine production of pharmaceuticals has left its mark on the retail pharmacies in that it has reduced the function of the apothecary in many cases to that of dispensing prepared medicines. Physicians' prescriptions are still compounded by the pharmacist, but many of these merely call for preparations of manufacturers. Sometimes physicians combine in one prescription two or more prepared medicines with certain additional simple ingredients, but often the prescription requires only the transfer of liquids, pills or tablets from bulk containers to bottles, boxes or vials, which are then turned over to the consumer. It is estimated that in 1929, 165,000,000 prescriptions were filled in the drug stores of the United States; some pharmacies specialize in the filling of prescriptions to the practical exclusion of all other business. The total annual sales of retail drug stores are approximately $1,650,000,000; about 37 percent of this total comprises drugs and medicines, of which 28 percent covers the sale of patent medicines and drugs and medicines sold directly to the public without physicians' prescriptions. Hospital and sick room supplies account for an additional 5 percent, while the remainder represents largely the sale of sundries. The promotion by manufacturers of common drugs under copyrighted trade names makes it necessary for pharmacists to carry duplicate products, increases their overhead costs and adds to the costs of drugs to the consumer.

ROBERT P. FISCHELIS

See: MEDICINE; PUBLIC HEALTH; FOOD AND DRUG REGULATION; ADULTERATION; CONSUMER PROTECTION; PROFESSIONAL ETHICS; STANDARDIZATION; PATENTS; DRUG ADDICTION; OPIUM PROBLEM.

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MEDICI, Florentine merchant family and dynasty. Like scores of Florentine families before them, the Medici rose from humble circumstances by their commercial enterprise. They began to gather strength about 1400, when under the guidance of Giovanni (1360–1429) the Medici trading company became the leading Florentine firm. In conformity to the traditional practise of such companies the Medici combined the operations of a bank with an international trade in commodities, particularly wool, cloth, silk, leather, alum and furs. It was only under Giovanni's successors, however, that their mercantile undertakings, favored by concessions from France, England, Burgundy, the papacy and the monarchs of the Orient, attained great dimensions. Giovanni himself owed his wealth chiefly to his activities as a money lender. He became the banker of the papacy, and this lucrative connection served ever afterward as the main pillar of the Medici fortunes.

Accepting the contempt of the merchant oligarchs then ruling the republic of Florence, the *novus homo* Giovanni steered clear of politics, but prudently strengthened his hand against the magnates by currying favor with the people. At his death he was regarded as the leader of the discontented industrial workers excluded from control. No sooner had his very capable son Cosimo (1389–1464) assumed the succession than the storm broke, and when the sky cleared in 1434 Cosimo was ensconced in power. Mindful, however, that his power was of popular origin and that Florence still cherished its republican traditions, he retained the old constitution based on the guilds, particularly the merchant guilds. The sole change due to the Medicean revolution was that Cosimo replaced the

former oligarchs and by building up a following from his own class of the new rich controlled political appointments. As a "political boss" cautiously avoiding both office and display, Cosimo governed Florence until his death. His system was continued during the reign of his son Piero (1416–69).

Piero's son, Lorenzo the Magnificent (1449–92), abolished the old constitution in favor of a more direct rule; at his premature death the Magnificent was fairly on the way to becoming a prince in name as well as in fact. Playing a far more glamorous role in international politics than had his predecessors, he paid for his political triumphs at home and abroad with the decline of the family business. The bank, which had branches in all the great European centers, went in for governmental loans, from which it suffered disastrous losses, particularly in the case of loans to the English crown and the house of Burgundy. Lorenzo managed to avert bankruptcy only by dipping into the public treasury, so that toward the end of his rule the affairs of the firm were inextricably entangled with those of the state.

In 1494 when the invasion of Italy by the French king Charles VIII destroyed the precarious equilibrium among the small Italian states, the whole edifice of Medicean power collapsed overnight. The Medici were driven into exile and the bank on which their political power had been reared disappeared in the general turmoil. Although they came back from exile twice and after their second return, in 1530, converted Florence into a principality, they owed their elevation no longer to their money power but to an identification with the papacy which Lorenzo had effected by having one of his sons, Giovanni (1475–1521; Pope Leo X from 1513), made cardinal. Both Leo and a second Medicean pope, Clement VII (pope from 1523 to 1534), exerted all their influence to restore the family. But as the main line died out shortly after the second restoration, it was the secondary line which achieved hereditary rule, first as dukes of Florence and later as grand dukes of Tuscany.

It was the good fortune of the Medici to rise to power in that century and town which saw the birth of the modern spirit. Fully sharing the intellectual interests of their fellow citizens, they achieved, particularly in Cosimo and Lorenzo, a degree of cultivation which enabled them to exercise as fruitful a patronage of learning and the arts as is recorded in history. Not only did they support scholars and writers but they assembled the first great public library. As for the arts in all their branches, so thoroughly did the Medici identify themselves with the brilliant galaxy of Florentine architects, sculptors and painters that the whole period is not improperly called the Age of the Medici.

FERDINAND SCHEVILL

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MEDICINE

HISTORY ..... KARL SUDHOFF
MEDICAL EDUCATION ..... HELEN R. WRIGHT
ECONOMIC ORGANIZATION ..... LEWIS WEBSTER JONES
BARBARA JONES

HISTORY. The earliest practise of medicine was probably surgery performed in the treatment of injuries which man sustained in his struggles with fellow men or with wild animals. Hit and miss attempts to deal with emergencies led to the important discovery that the flow of blood can be stopped through pressure. Trephining of the skull was skilfully practised in many primitive societies. Most prehistoric medicine, however, was magic, which also played a leading part in the recorded healing art of the Near East.

The physician (*azú*) in the Code of Hammurabi (*c.* 2000 B.C.) was a surgeon who was paid like an artisan. The medicine men were priests who also dispensed and recorded the caste knowledge of empirical therapeutics. The beginnings of hygiene are to be found in Babylonia

and other countries in the ritual purification of the body through immersion in baths or natural streams. Cuneiform medical texts contain both incantation rites and therapeutic prescriptions of vegetable, mineral and animal substances. People afflicted with skin diseases regarded as contagious were segregated from the rest of the population or were "cast out" beyond the boundary stones and left to the mercy of wild animals—only later were special houses built for them by the Greeks and early Christians. The therapy of the Babylonian priests included besides magic potions and charms the application of irrigations, compresses, bandages, plasters and salves. The medical texts deal with all the organs of the body, including eyes, ears and teeth. No surgical texts in the strict sense of the term have been discovered, although military communications suggest that in the late Assyrian periods clinical surgery was based on fixed rules which gradually became ossified.

Fragmentary records from the Old Kingdom in Egypt in the third millennium B.C. reveal remarkable practises, including the stitching of wounds; trephining, however, was unknown. Surgical treatments of swellings caused by insects, and blood letting, cupping and irrigations are found in a fragment of this period discussing veterinary practise which makes no mention of charms; but the latter are present in a contemporaneous fragment dealing with gynaecology. Clinical data accompanied by attempts at prognosis are found in the Edwin Smith and Ebers papyri, which constitute the chief sources of information on Egyptian medicine. In the period covered by these papyri the diagnostic art of the old Egyptians, applied also to internal diseases, reached its highest degree of proficiency. Liver and spleen enlargements were recognized; secretions, especially of urine and perspiration, were studied; and a kind of auscultatory examination was made on the chest and abdomen. Veins and tendons were an important feature of the structure of the body according to the Egyptians; representations of the vascular system are found in three medical papyri, in which incantations are given considerable attention. The priestly and noble castes devoted a great deal of attention to cleanliness, the former resorting to circumcision of women as well as men. At an early date tests were formulated for determining pregnancy and fertility of women. But by the time of the Middle Kingdom progress in medicine had ceased, probably as a result of caste restrictions on medical knowledge. The medicine and hygiene of the ancient Jews were influenced by both Babylon and Egypt. Their enforcement of circumcision as a tribal mark, of the dietary laws, of strict meat inspections, and the segregation of contagious diseases, especially of Biblical leprosy (*tzaraath*), represent important hygienic practises.

The healing art of Greece marks a great achievement in the history of medicine. Through the Hittites the knowledge of the Near East came to the Ionians and to the southern Dorians, who excelled in pure medicine. Although in some fields the Greek physicians were anticipated, the Greeks may be said to have created the science of medicine. The teaching and practise of the Coan school of medicine was certainly related to the surgery revealed in the Edwin Smith papyrus; the Cnidian school, on the other hand, appears to have had its roots in Asia Minor, Mesopotamia and Persia. The basis and presuppositions of Greek medicine are to be found in the speculations of the Ionian nature philosophers, for Greek medicine owes its origin not to the priestly healing practises of the Aesculapian temples but to the ideas of philosophers like Thales, Anaximander, Xenophanes, Heraclitus, Anaxagoras, Pythagoras and Empedocles. Only the incomparable ethical ideals which inspired the early Greek physicians originated in the temples.

The prototype of all Greek medical heroes was Hippocrates, a native of Cos, who not only mastered Greek medical knowledge but contributed to its advancement by his studies of epidemic diseases. He was the first to deal in a systematic way with the relation of hygiene to the varying conditions of climate, soil and water. The clinical medicine of his time was set forth and systematized by his school, which also brought to light the medical knowledge of the Cnidian school. To appreciate the progress made by the Coan school one need only compare the scientific character of the Hippocratic book the *Wounds of the Head* with the stumbling attempts of the Egyptians as revealed in the Edwin Smith papyrus. Although Hippocrates did not follow the example of the Egyptian and Mesopotamian physicians, who attempted to treat extremely difficult cases, the *iatreia*, or surgeries, in the houses of physicians offered such patients opportunities for prolonged medical care and immediate aid of the type dispensed in modern private clinics and public hospitals. The advances in national hygiene brought about by the public character of Greek medical service cannot

be overestimated. Medical assistance was given to Greek citizens free of charge by physicians who were engaged at fixed salaries covered by special taxes. Public bathhouses, often directly attached to wrestling and athletic grounds, were supported either by public funds or by gifts of wealthy citizens and were widely used in Greece and in the colonies by men and at certain times also by women. The communities offered to all citizens facilities for physical culture and training as well as medical treatment in case of accidents. The athletic institutions were equipped with medical staffs; Galen, for instance, was for many years the head physician of the *gymnasium* of Pergamum, his native city. The Dorians, motivated by the desire to encourage the procreation of vigorous and healthy offspring, devoted attention to the physical training of women. Xenophon's admonition to his fellow citizens to imitate the rigid gymnastic training of the Persian noblemen is perhaps an indication of decadence.

The spirit of emulation and competition which dominated Greek life and contributed to its progress found expression in the rivalry between the schools of Cos and Cnidus. One school centered its interest in the body as a whole and its pathological and physiological manifestations; the other was concerned with study and clarification of the functions and disturbances of the separate organs: of the alimentary canal and its glandular equipments, of the respiratory and circulatory systems, of the formation and secretion of urine, of the sex organs of men and women. Festival games and contests for the prizes of the Asclepiads and Heracliteans were given on the *Triopios* of Cnidus as well as later in the Aesculapian temples of Cos.

In the case of the early medical school of Cyrene, which presumably derived its knowledge from Egypt, no names of members have been preserved. Nor is there any definite information concerning the medical school on the island of Rhodes: even the exact place of its location is unknown. More is known concerning the schools of southern Italy, especially the Sicilian which developed its doctrines in opposition to the Hippocratic school; the latter, repudiating the clinical case method to which it had formerly assigned a central position, ended in dogmatism and a system of fixed scholastic rules. The rigidity of the Hippocratic school also gave rise to other opposing tendencies, which found expression in schools headed by great personalities, such as those formed by Herophilus and Erasistratus in Alexandria, where the foundations of human anatomy were established in the fourth century. The empirics under the leadership of Philinos the Coan put chief emphasis upon observation, oral tradition and the method of analogy and contributed materially to medical progress. During this period also pharmacology developed in Alexandria, the emporium of the eastern drug trade.

The anatomical science of Alexandria gave a powerful stimulus to Greek surgery. With the shifting of the center of medical learning from Alexandria to Rome a new movement gained ascendancy under the leadership of Asclepiades of Bithynia, whose treatment of disease was a combination of diet, gymnastics, massage and hydrotherapy and whose success was due to the efficacy of his therapeutic method. The movement was described in the eight medical books of an encyclopaedic handbook written by Celsus in the skeptical spirit of the empirical school. These popular books embody the three principles of Greek medicine: rational regimen, pharmaceutic treatment and surgery. Written in the days of Tiberius at the beginning of the Christian era and forgotten throughout the Middle Ages, they were brought to light by Simon of Genoa about 1300; they called forth general admiration and exercised wide influence during the Renaissance.

The chief contribution of imperial Rome to public hygiene was the establishment of public baths throughout the empire. The ideal of living in accordance with nature, popular among the followers of the stoic philosophy, gave rise to the influential pneumatic school of medicine. Founded in Cilicia by Athenaeus of Attalia, a brilliant physician who lived during the reign of the emperor Claudius, this school was further developed under Trajan by the Syrian Archigenes of Apamea, whose doctrine is strikingly evident in the excellent book of Aretaeus. The pneumatic doctrine brought the older humoral pathology into harmony with the fashionable stoic philosophy and modernized it through an emphasis upon the pneuma and its bearing upon disease. At the same time the methodist school continued active; Soranus of Ephesus, who lived shortly before Galen, worked out doctrines concerning midwifery and diseases of women and dealt in a comprehensive manner with other aspects of medicine, especially physiology and anatomy. In Rome he gave lectures on the latter subject accompanied by vivisections, and he compiled the pharmacological knowledge of his predecessors and contemporaries. In this

achievement he can be compared only to Dioscorides, who lived a century previous and whose book preserved by chance contains the essential elements of materia medica. Almost all the Alexandrian literature, even the works of Herophilus and Erasistratus, vanished in the course of five hundred years; concerning this period there can be made only cautious inferences based on the extant polemical writings of Galen, who sought to revive the fundamental principles of Hippocratic doctrine. Galen's most important works are those on practical medicine, which he wrote in the last decades of his life.

During Galen's lifetime Christianity began to exercise an influence upon medicine. Its emphasis upon sympathy with sufferers and upon Christian charity was exemplified in Basilias, a special city for the sick established at Caesarea by Basil the Great. Here patients were nursed and given medical assistance; arrangements were made for the transportation of the sick, and special houses were built for the care of outcast lepers. These represent the oldest hospitals devoted especially to the care of the sick; accounts of hospitals said to have existed in India in pre-Christian times or in the first centuries of the Christian era have not been verified. The emperor Julian, who was an Aesculapian adherent, expressly turned the attention of the pagan priests to the achievements of the Christian hospitals as an example worthy of imitation. Later the Aesculapian temples were transformed into the Christian hospitals of SS. Cosmas-Damian or SS. Cyrus-John. In the east Christian hospitals continued to dispense charitable aid to the indigent. They gradually developed into well equipped clinics and hospitals with well organized medical service and separate wards, as illustrated in the hospital regulations and service assignments in force at the Pantokrator monastery in Byzantium during the first half of the twelfth century.

Little is known about Moslem hospitals, which followed the Byzantine model. As early as the eighth century first aid stations and clinics dispensed services at the great mosque in Cairo on days on which religious services were held. During the twelfth century the Nuric hospital was founded in Damascus and at the end of the thirteenth century the al-Manṣūr hospitals were constructed at Cairo. The Moslems came into direct contact with the Alexandrian schools of the Eastern Empire; in the schools of Syria and of the Sassanides they studied the Greek medicine of the Hellenic period as it was developed after the death of Galen by the encyclopaedists Oribasius, Alexander of Tralles, Aëtius and Paulus Aegineta. The writings of the Greek physicians were translated first into Syriac and then into Arabic. The growth of medical knowledge in the Moslem world, especially in Bagdad, was aided by the contributions of several Persians, among whom were Ar Rāzi, the clinician who was the first to give an account of smallpox and measles; 'Ali ibn-al-'Abbās, who composed a summary of Greek learning; and ibn-Sīna (Avicenna), who wrote a similar but far more penetrating summary. In Andalusia another Moslem physician, Abu al-Qāsim, made an important contribution with his work on Greek surgery, the most comprehensive treatment of the subject which had yet appeared. His countrymen ibn-Zuhr (Avenzoar) and ibn-Rushd (Averroes) summed up their knowledge in instructive compendia. Continuing the philosophy of Aristotle and ibn-Sīna, ibn-Rushd revolutionized the thought of his time; his influence was stronger in the west than in the east or among his countrymen, who persecuted him and rejected his teachings.

Conditions for the development of medicine were much less favorable in the west, where both the Greek cultural tradition, which had inspired the schools of Alexandria, Edessa, Nisibis, Gôndishapur and Damascus, and the libraries of the eastern schools were lacking. Greek culture continued to yield modest fruits in the outposts of the Western Empire—in Numidia, Carthage, Gaul, Spain, Ireland and under the Visigoths and Vandals—but these were largely destroyed by the invasions of the Saracens, who furthered scientific development among the subject peoples only after the eclipse of their power. The Western Empire, with the exception of a narrow strip on the coast of southern Italy, gradually lost all knowledge of the Greek language, which was necessary only for purposes of trade with the Levant. Cassiodorus, the Syrian chancellor of the Ostrogoth Theodoric, realized the danger which the loss of culture involved for the west; when his idea of founding a university in Rome did not meet with favor, he established a small semimonastic community of scholars, who collected and copied Greek manuscripts including medical works and translated them into Latin. After his death the manuscripts were transferred to Bobbio in the north of Italy, where they passed into the hands of other cultural missionaries from Ireland. The scientific spirit later spread to Eng-

land, France, western Germany and the north of Italy, resulting in the so-called Carolingian renaissance, which aimed to preserve classic antiquity through copying Latin literature. Alchwine, Columba and Gallus among the missionaries established monastic centers of learning at various sites and collected and compiled many Latin texts. Most of the works were anonymous, as is characteristic of dark transitional periods which tend to relapse into primitivism; names were later ascribed in a haphazard manner. The meager literature preserved directly from antiquity is not of high standard.

In southern Spain the few hospitals which had been created by Greeks after the eastern pattern were exceptions. In Rome and its harbor city the hospitals were mere hospices for Christian service, in which the matron founders did the nursing. There was no question of employing physicians in these places; people at that time were concerned only with their own salvation, which they hoped to attain by performing Christian services and menial duties. Conditions were similar in the provincial cities, in the *hôtels-Dieu* of Paris and London, in the hospitals throughout England and in western Germany and in the monastic hospitals of France; in most cases these institutions were nothing but almshouses. Monastery infirmaries became the models for hospitals; the monks serving in the infirmaries were equipped for their daily medical duties by a book of prescriptions and a book of descriptions of symptoms. A new monastic and priestly medicine thus arose. Some of the monks, for example, Heribrand of Chartres (*c.* 990), also utilized in a fragmentary way the valuable works of classic medical literature.

But medical practise was kept alive largely as a result of the desire for culture of the barbarian converts and through the knowledge transmitted by the Arabs. Benevento and Salerno became centers of a progressive movement in western medicine. Through the efforts of Constantine the African the west came in touch with early Moslem knowledge, especially the works of 'Ali ibn-al-'Abbās. A century later the Lombard Gerard and his school of translators transmitted to the western world the Moslem natural and medical scientific treasures hoarded in Toledo. Scholastic students endeavored to assimilate the Arabized knowledge of Hellenism, until the Renaissance discovered the direct road to Greek medicine. Meanwhile surgery in Italy and later in France was developed by practise, and finally the brilliant Flemish physician Vesalius destroyed the authority of Galen by his independent human dissections.

The work done by Vesalius in anatomy was paralleled in internal medicine, although with less success, by Paracelsus (Theophrastus von Hohenheim); rejecting the methods of Galen and ibn-Sīna, which had degenerated into routine and dead formulae, and inspired by Hippocrates he sought in practise and research concrete knowledge, which he utilized for healing and for the preparation of drugs. Paracelsus recognized the dangers entailed in the melting and preparation of mercury, lead and other metals and accordingly gave an account of occupational diseases which prepared the foundation for modern social hygiene. Two hundred years later occupational hygiene was considerably advanced by Ramazzini at Modena. The basis of another important aspect of public hygiene was furnished by Fracastoro, a contemporary of Paracelsus, who stated the doctrine of infection and contagious diseases in 1546 in a treatise written in an almost modern spirit. Fracastoro's postulation of the existence of microorganisms in infectious diseases was later established by Koch and others.

The age of Paracelsus, Vesalius and Fracastoro also witnessed a decisive transformation in the hospital system of the west. The establishment of leper hospitals led to the development of segregated houses for special diseases; this system later suggested to physicians a method of dealing with contagious diseases. Syphilis, which attracted general attention shortly before 1500, also played an important role in the development of hospitals when the mercury treatment, successfully dispensed since the twelfth century, was adopted by city hospitals. People thus began to realize that chronic diseases could be cured, and hospitals developed from mere nursing houses into curing places under the direction of physicians and surgeons. Segregated houses were established during epidemics and for chronic and frequently recurring contagious diseases. The quarantine system, introduced during the fourteenth century into the Italian harbor cities, was adapted to new needs and became a permanent practise.

The study of biology also gained vigor through the campaign launched by Paracelsus for the introduction of chemical and physical principles into medicine. Harvey's complete demonstration of the circulation of the blood in human and animal bodies was the signal for a general advance in the study of biology as well as of

pathology. Under the impetus given to pathology by Morgagni there began a movement which culminated in the experimental work of Bichat, who formulated the program and laid the foundations of modern medicine. New departures were made by clinicians like Sydenham, who took his starting point from Paracelsus; by Boerhaave; by Stahl; by Haller; and by the old Vienna school, especially its leading member, Auenbrugger, whose discovery of the use of immediate percussion of the chest in diagnosis was completely worked out in the nineteenth century by the Frenchmen Corvisart and Laënnec. The cell doctrines of Müller and Schwann served as a basis for Virchow's cellular pathology. The doctrine of *contagium animatum*, which found its crowning expression in the modern doctrine of pathogenic microorganisms, was for the first time clearly stated by Jacob Henle in 1840. Striking advances were represented by the attempts of Jenner in 1798 to combat smallpox through the harmless inoculation of cowpox and by Semmelweis' experiences in 1847–48 with the aetiology of puerperal fever. In 1860, while Pasteur was working on the problem of fermentation, Davaine published the results of his researches on anthrax, which were finally corroborated in 1876 by Koch, whose method was influenced by that of Henle. In 1878 Koch published his studies in the aetiology of wound infections; in 1882 he discovered the germ of tuberculosis and in 1883 that of Asiatic cholera. Neisser discovered the gonococcus in 1879, Hansen the germ of leprosy and Laveran that of malaria. The Koch and Pasteur schools gave rise to a rapid succession of brilliant discoveries —among them those of the germs of glanders and diphtheria by Löffler in 1884, of pneumonia by Fränkel, of tetanus by Rosenbach, of erysipelas by Fehleisen, of typhoid fever by Eberth, of influenza by Pfeiffer, of Weil's disease by Jaeger, of the plague by Kitasato and Yersin; the discovery of the syphilis protozoa, anticipated by Klebs, was made in 1905 by Schaudinn.

Excellent work was also done in the fight against epidemic diseases; the extermination of yellow fever in Panama and Cuba was largely due to Sternberg, Reed and Gorgas. Scientists from all parts of the world vied with one another in the war against tropical infectious diseases; the researches carried on in connection with sleeping sickness and the work done by Theobald Smith on Texas fever are striking examples.

The end of the nineteenth century and the beginning of the twentieth were characterized by great activity in medicine. This period witnessed the emergence of serum treatments, of antibodies and antitoxins as a result of bacteriological studies, of treatment by X-rays and other forms of rays, including the treatment of rickets by light rays. In these fields American physicians took an active part as both collaborators and leaders, thus perpetuating a tradition that goes back to Morton and Jackson, who occupy an important place in the history of anaesthetics, and to Sims, whose work in the field of uterine surgery in the period before the discovery of antisepsis ranks with that of the Scotchman Simpson and the Englishman Spencer Wells.

With the publication in 1867 of Lister's work on the antiseptic treatment of wounds a new chapter was begun in the history of medicine; Lister's method was subsequently refined and unessential elements were eliminated—asepsis replaced antisepsis—but his work opened the way to the surgical accomplishments of the last sixty-five years.

Recent progress in the field of medicine has been prodigious. Numerous methods have been developed for the prevention of pain, such as the morphine-scopolamine combination; local and spinal anaesthesia have been used since 1901. Among the most striking achievements are Sauerbruch's thorax surgery in pneumatic chambers, Cushing's brain and pituitary surgery, which was a pioneer contribution to physiology, and the various accomplishments of Halsted. Two Germans, Graefe and Helmholtz, laid the foundations of modern ophthalmology. The discovery of the salvarsan treatment by Ehrlich and Hata in 1910 made syphilis a much less dreaded disease. The World War gave rise to the method of combating spotted fever through delousing, the tetanus antitoxin injection for lockjaw, the antitoxin for gas gangrene, the typhoid injection and the Carrel-Dakin device for treating infected wounds. Among other important recent achievements have been the Wassermann test for syphilis in 1906, the development of the doctrine of vitamins in food by Gowland Hopkins in the same year, the Pirquet test for tuberculosis in 1907, the recommendation of a liver diet for anaemia first suggested in the United States and the discovery of insulin by Banting and Best in 1921.

Epidemics and contagious diseases are now largely under control, especially in the west—an achievement facilitated by advances in sanitation, the development of hygienic water sup-

plies, drainage and sewerage systems and food control, supervised by well organized health departments. Infant mortality has declined; the diseases of childhood are on the wane. But medical scientists are still faced by vast problems. Of special importance are those relating to the diseases of middle and old age, among them the discovery of the aetiology and cure of cancer. The science of medicine is just beginning to extend its horizons to include the important field of inquiry into the interrelation between physical and psychological disorders.

KARL SUDHOFF

MEDICAL EDUCATION in any country is affected by the whole educational system of which it is a part, by the history of its development, by the conditions under which the practise of medicine is carried on and by the broader social milieu in which it is placed. As medicine in its beginnings was tied up with religious rites, medical and religious education were not distinct. Specialized secular education for the practise of medicine appeared, however, at an early date; it was firmly established in the Greek medical schools in the age of Pericles, and it was found also among the Arabs. After the fall of Rome medical learning in Europe was kept alive in the monasteries and for a long period it was united with clerical education. The trend toward secular education was evident in the teaching of medicine at Salerno in the eleventh century and later in the medical curricula of the mediaeval universities.

Medical education through apprenticeship, by which an individual medicine man or physician passed on his knowledge to his successor, preceded the organization of the specialized medical schools and continued long after such schools were established. The education offered by the schools has varied relations to that given during apprenticeship. In France, for example, the medical schools were for many years designed for a supposedly superior group, while the great majority of practitioners, barber surgeons and apothecaries learned their trade as apprentices. In the United States, on the other hand, the earliest schools were frankly intended to supplement the training which the students received at the hands of individual preceptors. Gradually medical schools became the sole agencies through which medical education was carried on.

Medical schools may be classified broadly into three types: university schools, hospital schools and proprietary, or profit making, enterprises. The largest number are connected with universities and the trend is clearly in that direction; but in the United States and in most western European countries outside of Germany medical schools are still somewhat isolated intellectually and often physically from other university departments.

Governments exert more or less rigorous control over the content and standards of medical education. In Germany the control is direct, in England and the United States it is exercised through the governments' power to prescribe qualifications for those entering practise. In the United States, unlike European countries, the control is not in the hands of the central government but is left to the states. Some measure of uniformity in state standards, however, is brought about by the influence of such voluntary agencies as the Council on Medical Education of the American Medical Association, the Association of American Medical Colleges and the Federation of State Medical Boards. A peculiar feature of government control in the United States has been the tendency to write into the law specific requirements concerning the medical education of those licensed to practise; these requirements, which were the accepted standards when they were adopted, have remained on the statute books long after the best thinking on the subject has questioned their validity.

Medical education is now specialized professionally and presupposes relatively high standards of general education. In the United States the formal requirement is usually two years of college study including certain prescribed work in the natural sciences, but actually well over half the students complete a four-year college course before entering medical schools. This is in the tradition of the mediaeval university, where knowledge of Latin was essential for understanding the lectures and where the medical course was supposed to follow the arts course. It is, however, distinctly opposed to the tradition of the apprenticeship system; and since some schools developed as extensions of that system, the high standards of preliminary education have not been universally maintained. In the United States, where the demand for physicians grew faster than secondary and college education and where proprietary schools set the pace, many medical schools as late as 1910 admitted students who had not had a high school education and who were not eligible for entrance to liberal arts colleges. In every country

the requirements prescribed for premedical education have been shaped by tradition quite as much as by careful consideration of the objects to be achieved. In Germany, for example, they bear the influences of a class society and the desire to keep physicians in the company of gentlemen. In the United States the emphasis has been primarily on a study of the natural sciences, apparently more from a belief in the necessity of a knowledge of their subject matter than from a consideration of their value in cultivating intellectual habits. Recently the desirability of such early specialization has been questioned and consideration has been given to the possibility of reformulating the requirements so as to encourage general education, and to emphasize intellectual qualities and promise rather than the possession of specific knowledge.

Modern medical education is designed to provide a basic course for both practitioners of medicine and research workers in the field. The mediaeval university on the other hand was interested chiefly in the scholar, the hospital school in the practitioner. The objectives of medical education today are usually stated so as to emphasize helping the student to observe, to reason upon the basis of his observations and to use the findings of others in the interpretation of results. Thus the trend in educational theory toward an emphasis on the development of abilities rather than the acquisition of knowledge is reflected in the medical schools. But neither medical schools nor other educational institutions have a satisfactory solution of the problem of the relation of knowledge to the development of ability.

The typical course in modern medical schools comprises a study of physical sciences, biological sciences including bacteriology, anatomy and pathology, pharmacology, hygiene, medicine, surgery, obstetrics and other specialties. In anatomy the student dissects, in bacteriology he does laboratory work, in clinical medicine he works in the hospital, taking case histories, giving tests, examining and eventually treating patients under the guidance of experienced physicians. He is thus supposed to acquire some of the technical skill he will need in the practise of medicine, and also to obtain a more thorough understanding of the subjects which he is studying. Practise work and study from books are as a rule carried on simultaneously. In some countries, however, although the student sees patients while he studies disease, his own work with them is postponed until he has completed his formal courses; in most countries he goes through a period of interneship in a hospital, during which he confines himself to this work, following no other program of study. The influence of the mediaeval university on the development of this course is apparent. Its traditional division of the field into theoretical and practical medicine has never quite been lost; its use of the lecture has influenced methods of instruction throughout the history of education; its construction of a course dealing with all relevant knowledge has influenced all subsequent course making.

The establishment of a chair of anatomy during the Renaissance period was the earliest of the important innovations in medical curricula. The introduction of bedside instruction in the hospitals by Boerhaave in Leyden in the eighteenth century was significant, although isolated instances of this practise had occurred at a much earlier date and although it did not become general until later. The most revolutionary changes came with the scientific developments of the nineteenth century. The introduction of laboratory instruction in the German medical schools in the first quarter of the century was the symbol of a change which affected the whole of medical education, shifting its emphasis from a study of conclusions to a study of processes and its center of interest from treatment to causes. Not until the twentieth century, however, did the typical medical course conform to its present pattern. Laboratory facilities, previously found only in the exceptional schools, became general. Hospitals were brought into closer relations with the schools, giving the latter an opportunity to make the practise work of the students serve educational ends and not merely the convenience of the hospitals. The revolt against the lecture system made headway, and greater use was made of something similar to a case method of instruction.

The lead in medical education has been taken now by one country, now by another, and adherents of Veblen's theory of the advantages of cultural borrowing would find much to support it in the history of medical education. In mediaeval times the best known medical schools flourished in Italy, followed later by the medical schools at Montpellier and Paris. In the seventeenth and eighteenth centuries the outstanding schools, noted chiefly for their clinical work, were in Edinburgh, London, Leyden, Paris and Vienna. German medical education was back-

ward until toward the middle of the nineteenth century, when it moved rapidly to the fore and furnished the model for all other lands. In 1910 Flexner's reports on medical education revealed the fact that in spite of the presence of a few excellent schools the standard of medical education in the United States was incredibly low. The influence of these reports and the subsequent gifts of the foundations were powerful factors in effecting improvements. Medical schools in the United States now rank with those of other countries; they are probably on the whole better equipped than foreign schools and are beginning to attract advanced students from abroad.

Many criticisms are made of modern medical education. The curriculum is admittedly too crowded for effective results. The student is forced to cover so much ground that in many subjects he can acquire only partial knowledge, which may well be more dangerous than ignorance. The instructor, because he must present a large subject in a short time, tends to be dogmatic even when he knows that the students need to see the accepted truths as working hypotheses. This criticism has been made for at least half a century, but in addition to the difficulty of reducing the study of subjects which have won an established place in the curriculum, the expansion of knowledge in the medical field has been so great as to produce pressure not only for the introduction of new subjects but also for the devotion of more time to the old. As a result the student has all too little time for thinking about what he is doing.

The stress on the work in the basic sciences about which there was such enthusiasm at the turn of the century is now being questioned. Laboratory instruction is recognized as essential to an understanding of modern science, but it is contended that the laboratory courses given are adapted to the needs of technicians rather than to the requirements of students of medicine. Furthermore the basic science courses appear to many to be insufficiently coordinated with the clinical courses. In most schools the curriculum is constructed on the principle that for an understanding of disease a preliminary knowledge of the basic sciences is essential: thus the course is divided sharply in point of time into two parts, with the division emphasized in many ways. But exclusive attention to laboratory methods for a period of two years tends to make the study of clinical medicine difficult. For the sphere of laboratory science is one of uniformities, of quantitative exactness, of conditions subject to an almost perfect control, while that of clinical medicine is one in which no two cases are just alike, in which the materials to be manipulated are human beings, who may perhaps be controlled, but not by the techniques of the laboratory.

The shift in emphasis to the study of the causes of diseases which followed the discoveries of Virchow and Pasteur is also regarded by some as having gone too far. The importance of this study and of correct diagnosis is admitted by all; but knowledge of causation has advanced far more rapidly than knowledge of treatment, and it is suggested that the medical student should receive more stimulus to study methods of treatment and to work out ways by which they may be improved. Moreover it is questioned whether sufficient encouragement is given to the student to think in terms of the patient and not the disease, which is the avowed ideal of medical practise. The general practitioner is conspicuously absent from the medical faculty and as a result the student comes in contact with patients only through specialists, and is supposed to build up his picture of the whole by adding specialized picture to specialized picture. But the question is even broader than this. To think in terms of the patient rather than of the disease implies an understanding of the whole patient and of the patient as a member of society. The medical course, however, is limited primarily to the physical and biological sciences. The student is not usually led to consider the bearing of psychological or emotional factors on physical reactions or the possible effects of social and economic factors in the world in which the patient lives. Psychiatry has recently been placed on the curricula of some medical schools, but it is still regarded as a specialty to be kept in its own compartment. The importance of social and economic factors in affecting the patient's health is practically ignored. Medical education is being criticized also on the ground that it is concerned more with the study of disease in relatively late stages than with the study of preventive medicine.

In the United States attention is being directed to the problem of finding a way by which instructors in clinical medicine may have both adequate time for their work with students and sufficient contact with sick patients to keep them good clinicians. Traditionally in most countries the clinical instructor has been a

practising physician, earning part of his income from treatment of patients, part from his services as instructor. Under such circumstances the demands of private practise have often distracted attention from teaching. More recently there has been a movement to put at least some of the clinical instructors on a full time salary basis at the medical schools and at the hospitals connected with them. This would remove the economic pressure which has caused them to slight the work of instruction, but the question remains as to the amount of practise needed to make a physician the best possible clinical teacher.

A more fundamental criticism is that medical education has not solved the problem of keeping pace with a changing world. It is still weighed down by the authoritarianism of the mediaeval university, and it is still better adapted to teaching the truths of today than to developing the ability to appraise new discoveries. This criticism might be made with equal force of all modern education, for nowhere has it solved the problem of fitting students for a world in which change is normal. But the failure to solve this problem is probably attended with more obvious consequences in medical education than elsewhere.

HELEN R. WRIGHT

ECONOMIC ORGANIZATION. The provision of medical care ranks as a major industry. In the United States the capital investment in hospitals alone, about $3,500,000,000 in 1928, was exceeded only by the capital investment in the iron and steel, textile, chemical and food products industries. The estimated annual expenditure on all types of medical service totaled approximately $3,500,000,000 in 1929, roughly equivalent to the total national expenditure on education, both public and private. Table 1 shows the distribution of this expenditure among the various types of service and the sources from which the funds were drawn as disclosed by the extensive studies of the Committee on the Costs of Medical Care—representing all interests involved in the provision of medical services—after its researches into the economic aspects of the prevention and care of sickness, including the adequacy, availability and compensation of the persons and of the agencies which are concerned.

Of the 1,100,000 persons directly employed in 1929 in the provision of medical services in the United States—as many as are engaged in the extractive industries—the largest single group is employed in hospitals: the hospital personnel is estimated to be 550,000, in addition to which there are 2600 hospital superintendents. Next in numerical importance are the 200,000 graduate nurses, the 150,000 practical nurses and the 142,000 physicians with their 24,000 attendants. There are 132,000 pharmacists and 84,000 drug clerks and assistant registered pharmacists, over 67,000 dentists, 1800 dental hygienists, 12,000 dentists' assistants and

TABLE I

EXPENDITURES FOR MEDICAL CARE IN THE UNITED STATES, 1929
(In thousands of dollars)

SERVICE	TOTAL EXPENDITURES	SOURCES OF FUNDS			
		PATIENTS	GOVERNMENTS	PHILANTHROPY	INDUSTRY
Physicians in private practise	1,090,000	1,040,000	—	—	50,000
Dentists in private practise	445,000	445,000	—	—	—
Secondary and sectarian practitioners	193,000	193,000	—	—	—
Graduate nurses, private duty	142,000	142,000	—	—	—
Practical nurses, private duty	60,000	60,000	—	—	—
Hospitals: operating expenses	656,000	278,000	300,000	54,000	24,000
new construction	200,000	—	100,000	100,000	—
Public health	121,000	—	93,500	27,500	—
Private laboratories*	3,000	3,000	—	—	—
Orthopaedic and other supplies*	2,000	2,000	—	—	—
Glasses*	50,000	50,000	—	—	—
Drugs*	665,000	665,000	—	—	—
Organized medical services*	29,000	7,790	16,000	210	5,000
Total	3,656,000	2,885,790	509,500	181,710	79,000

* Not included in other items.

Source: Committee on the Costs of Medical Care, *Medical Care for the American People: Final Report*, Publication, no. 28 (Chicago 1932) p. 14.

10,000 dental technicians. Irregular practitioners, including osteopaths, naturopaths, chiropractors and Christian Science practitioners, total another 36,150 and there are 47,000 midwives. Nearly 30,000 persons practise limited or subsidiary branches of the healing art as physiotherapists, electrotherapists, masseurs, optometrists and chiropodists. There are also 5000 clinic attendants, 1400 persons employed in private clinical laboratories, 11,500 persons other than those already mentioned working in health departments and 1000 persons working for private health organizations. In addition to those directly employed in the provision of medical care, there are nearly 100,000 engaged in supplying goods and services essential to the conduct of the medical industry. According to the 1927 United States Census of Manufactures, over 86,000 persons were employed in the following affiliated industries: dental goods; drug grinding and druggists' preparations; professional and scientific instruments; optical goods; patent medicines and compounds; surgical appliances.

It is estimated that there were in the United States in 1927, 127 physicians per 100,000 population, their distribution ranging from 71 per 100,000 in Montana and South Carolina to 200 in California. Comparable figures for European countries are: Austria, 114; Great Britain, 111; Switzerland, 80; Denmark, 70; Germany, 64; France, 59; Norway, 57; Belgium, 54; Sweden, 35.

In the United States medical personnel and facilities are distributed not according to the needs of the people, which are presumably quite similar throughout the country, but according to their ability to pay for medical care. Medical practitioners tend to concentrate in the larger centers of population, where competition is keener but where the chances of remunerative employment are nevertheless greater. Thus 44 percent of the physicians in the United States practise in communities of 100,000 population and over; that they are economically justified in so doing is shown by the fact that they earn 54 percent of the total earnings of all physicians. In rural areas and small towns with a population of less than 5000, which contain almost 50 percent of the total population of the country, only 30 percent of all physicians are located; their earnings total 18 percent of all physicians' earnings. Even in Mississippi, where the supply of medical facilities appears quite inadequate to meet the real need for service, the occupancy of beds in general hospitals was only 49 percent, indicating that the supply exceeds the effective demand at current prices.

Only a very small minority of the vast and heterogeneous body of consumers, scattered over more than three million square miles of territory, are in a position to exercise a wise and well informed choice in their demand for medical services. The majority are extremely credulous and are far from possessing the critical attitude toward cures and nostrums which would result from an appreciation of the real nature and functions of modern medicine. Superstitious healing practises and semimagical cures are widely used. The general ignorance of the value of scientific medicine, debarred from advertising the services it offers by the rules of professional ethics, gives a strong competitive advantage to inferior substitutes. Quacks and irregular practitioners of all kinds have no hesitation in offering a certain cure for a fee specified in advance, whereas the patient is often intimidated by the professional reticence of the qualified physician and is hesitant because of the uncertainty as to his fee. In 1929 the people of the United States spent no less than $360,000,000 on patent medicines of dubious value; another $165,000,000 was spent on "home remedies," which also are deplorable from a medical standpoint; $3,000,000 was paid to midwives, most of whom were unqualified; $42,000,000 to osteopaths, $63,000,000 to chiropractors, $10,000,000 to naturopaths and $10,000,000 to Christian Science practitioners and other religious healers.

While the demand for medical care is subject to the usual limitations imposed by considerations of price and tends to contract when prices rise or purchasing power declines, it is differentiated from the demand for other common articles of consumption in that a visit to the doctor is regarded in most instances as an unpleasant necessity, undertaken only in order to obtain relief from pain or sickness. Emergency medical care, in case of accident or serious illness, is a necessity more urgent even than food or shelter, and the demand for this type of attention is necessarily inelastic; it will ordinarily be exercised regardless of the financial sacrifice involved. Although the number of cases of serious illness or accident likely to occur within a given period among a large population group can be foretold with reasonable certainty, no individual within the group can predict his own medical needs. Thus a serious unforeseen illness is likely to strike a family as a financial calamity, aggravated as it is by the simultaneous curtail-

ment of the family income if the sick person is a wage earner. The burden of the costs of illness is very unevenly distributed, as is shown by the study of family expenditures published by the Committee on the Costs of Medical Care. Of 2100 families living in cities of between 5000 and 100,000 population which furnished data on medical expenditures for an entire year, the general average expenditure was $30 per capita. This average, however, conceals a wide range of individual expenditures: among the families with annual incomes of under $1200, 79 percent were charged less than $60 during the year; their bills amounted to 35 percent of the total costs for this income group. At the other extreme, .4 percent of these low income families were charged $500 or over, or 7.3 percent of the total costs of the group. The same uneven type of distribution of medical costs prevailed among all the groups studied by the committee, regardless of income or location.

While the need for emergency medical care takes precedence over all other calls on the consumer's income, there is considerable elasticity in the demand for less urgently needed types of medical service. People suffering from mild or chronic ailments who can get along without immediate attention will do so if the price is more than they are able or willing to pay; or, if inferior types of service are offered on more attractive terms, they may prefer to buy such substitutes for scientific medical care. The persistence of untreated diseases and defects and the enormous toll of preventable deaths indicate a further potential demand which is not made effective under the present system of producing and consuming medical services.

Surveys have shown that at any given time about 2 percent of the population in the United States is incapacitated by sickness, involving a loss of wages for the incapacitated individuals, a reduction in the productive efficiency of industry and an increase in the total cost of education due to absences of children from school. An estimate by the Committee on the Costs of Medical Care places these economic losses due to sickness at no less than $250,000,000 annually. In view of the fact that a large proportion of this illness is preventable by the application of known and tried medical methods, the economic argument for a larger expenditure for preventive medicine is compelling. The economic losses resulting from preventable illness are furthermore exceeded by the losses from premature deaths. Dublin, basing his calculation on the costs of rearing a child and on future earning power, has estimated that the total capital value of the lives which can be saved annually through the application of preventive medicine is approximately $3,500,000,000. In an attempt to gauge the extent to which the need for medical care is being met under the present system of producing and paying for medical services, the Committee on the Costs of Medical Care drew up standards of adequate care, based upon the present incidence of diseases and defects and the present capacities of medicine to deal with them. The estimated amount and kind of service required was compared with the actual services consumed by the 9000 families studied. At every income level the amount of care received fell short of the standards of adequate care formulated by the committee, the greatest inadequacy being in preventive services. There was a notable increase in the discrepancy between care received and estimated need as family income declined.

The present inadequate use of the resources of modern scientific medicine for the promotion and preservation of health suggests that the difficulty lies in the nature of the economic arrangements by means of which the producers and consumers of medical services are brought together. Medical technology has advanced so rapidly as to revolutionize the nature and functions of medical practise. The need for medicine has expanded with changing social ideals and with the changing capacities of medicine. Anaesthesia and asepsis, by making surgery safer, have raised it to the category of necessities of life for many persons; similarly, the discoveries in the field of pathogenic microorganisms have established the control of communicable diseases as one of the elements in a civilized standard of living. Moreover the economic organization of society has undergone a radical transformation. The typical physician no longer serves a stable agricultural community, but must fit himself into an urbanized world of rapid communication and large scale, standardized production.

Medical institutions have not been adapted and coordinated to suit these changing conditions and medical services remain at present largely unplanned and individualistic. The private practitioner is still typical, and his ideology remains dominant. Of the 143,000 physicians engaged in professional activity in the United States, 121,000 are in private practise, 1000 are members of private group clinics and 21,000 are employed on a full time salary basis. The private

practitioner occupies an anomalous position, being at the same time part of a vast technical organization and a small independent business unit. His former self-sufficiency has been destroyed by technical advances; whereas he used to carry most of his stock of medical information in his head and the tools of his trade in his saddlebag, he now needs the cooperation of specialists and depends upon hospital facilities and expensive equipment for the practise of his science. His necessary professional relations with the various medical agents with whom he must cooperate have no customary economic machinery to facilitate them; out of this situation arise such professionally deplorable practises as fee splitting.

The growth of specialization is one of the conspicuous features of modern medical practise. According to a study made in 1930, 23 percent of approximately 5000 American physicians in private practise were complete specialists, 21 percent were partial specialists and the remaining 56 percent were general practitioners. The reasons for specialization are partly technical, partly economic. Specialization enhances the value of the physician's services and so enables him to command a higher income. The average net income of physicians whose competence was completely specialized was $10,000 in 1929, while that of the general practitioners was only $3900. The general economic law that specialization is limited by the extent of the market holds true in medicine: in small towns of less than 5000 population 86 percent of the doctors are in general practise, whereas in cities of 50,000 population or over more than 60 percent of all physicians specialize in part or altogether. From the point of view of good medical care the technical advantages of special skills are to a great extent offset by the economic difficulties which hinder coordination of the work of specialists. The patient is in no position to determine the type of specialist service he requires but resents the necessity of paying the general practitioner to find him a specialist, in addition to the fees he must pay the specialist himself. The patient often seeks to avoid this double expense by going directly to a specialist, whereas his needs are generally better served by a general practitioner who is familiar with his medical history and who works in consultation with specialists as they are needed.

Although the costs of medical services have increased rather than diminished with the advance of medical knowledge and cannot be reduced by any system of mass production, the private practitioner is an unnecessarily wasteful economic unit. Individual offices involve considerable duplication of expensive equipment, much of which is only infrequently used. The average investment of sample groups of practitioners studied by the Committee on the Costs of Medical Care ranges from $1860 to $3310 for physicians and from $1698 to $5927 for dentists. The average ratio of running expenses to total gross income was found to be 40 percent for both physicians and dentists. The cost of medical education to the student or his family is variously estimated at from about $4500 to $10,000, while additional expenses are borne by the medical schools and thus ultimately by the public. The physician's time is not used fully in the practise of his skill; the private practitioner often devotes some part of his time to clerical work. Under the system of private practise moreover the young physician, in spite of efforts to make himself known by serving as lodge doctor or by giving free service in order to build up a hospital connection, is often employed only for about half his time during the first five years after his graduation from medical school. The hours of the private practitioner are long and irregular, and unless he works in partnership with other doctors his income ceases when he takes a holiday. The incomes to be earned are not high, and they are moreover precarious. The average net income of physicians in 1929 in the United States was $5300; but 33⅓ percent of all practising physicians had a net income of less than $2500, and 15 percent earned less than $1500. The median net income was $3800. In 1930, however, physicians' net incomes had decreased by approximately 10 percent in the middle Atlantic states, 19 percent in the New England and Pacific states and 50 percent in Oklahoma, Texas, Arkansas and Louisiana.

The fee system of charges commonly practised is often incompatible with the requirements of good care especially in cases of chronic illness, because patients are apt to cease paying for visits as soon as the worst symptoms have been alleviated. The custom of applying a sliding scale of charges works out to the detriment of both the public and the profession. The public suffers from the uncertainty as to price, and the treatment of the indigent sick is paid for, not by taxation proportionate to capacity to pay levied on all members of the community, but by those solvent members of the community

who fall sick. The doctor exercises a taxation function for which he is ill equipped, and his judgments as to the economic position of his patients are often erroneous. Moreover the sliding scale encourages consumers to demand the services of a physician whose high charges, made possible by a great reputation, would normally put him outside their reach; while young and perhaps equally competent physicians suffer from underemployment. At the same time the tradition of free service which is used as an argument in justifying the use of the sliding scale imposes an unequal burden on the members of the medical profession; the anticipation of free service on the part of many patients contributes to the fact that the proportion of bad debts is higher in medicine than in the sale of other articles of consumption. It was found that the heaviest burden of bad debts fell in 1929 on the least affluent members of the medical profession in the United States: physicians with an income of under $1000 collected only 51 percent of their total charges, whereas those with an income of between $5000 and $10,000 collected 80 percent.

Private practitioners work as competing units, but it is a competition shorn of most of its usual methods. Competing physicians can do nothing to attract business and the purchaser is debarred from comparing values by the fact that the service is highly skilled and adapted to the needs of a particular patient; there is thus no open market in which competition can become effective. In spite of its evident disadvantages, both as a method of producing good medical care and as a means of earning a living, the typical physician clings to his competitive economic status with conviction fortified by the rules of professional ethics as formulated by the American Medical Association. Although most of these rules are ethical in the best sense, embodying the ideals of a profession devoted to public service, some precepts are designed to regulate and insure the continuance of free and fair competition. Thus contract practise is held to be unethical "when there is interference with reasonable competition" among the physicians of a community. The opposition of certain organized sections of the medical profession to all forms of medical service, however desirable from the point of view of the public, which threaten in any way the business of the private practitioner often emphasizes the un-Hippocratic, craft aspects of medical ethics. It is this sentiment which appears to have influenced the rejection, by the members of the organized medical profession on the Committee on the Costs of Medical Care, of the committee's majority final report recommending a unified organization of all types of medical care in each community grouped around a health center, and some method of group payment on a regular annual basis for complete medical care. The conservative argument against all forms of economic organization in medicine other than private practise stresses the value of individual initiative in keeping up the standards of the medical profession. In the face of a situation in which the economic interests of the practitioner are often at variance with his professional interest in doing his work well, the social value of the purely economic incentive supposedly offered by private practise is dubious. The charge that the quality of work suffers when the physician is paid a salary instead of collecting so much for a visit on the usual piecework basis of private practise is not borne out by the experience of organized medical services.

Private practise has left the rural areas inadequately provided for and is likely to be supplanted in these sections by some system comparable to that adopted with success in Saskatchewan, where more than thirty rural communities employ one or more physicians on a salary basis to provide medical services to the residents. The expanding activities of public health services threaten the survival of private practise from another quarter. In the past the functions of the two agencies have been fairly clearly distinguished, public health being concerned mainly with prevention and private practise with diagnosis and treatment; but no such clear division of functions now exists. The success of public health measures in reducing the incidence of communicable diseases has emphasized the importance of the serious chronic diseases of middle life, the prevention of which through the periodic health examination lies within the province of the physician. On the other hand, public health departments now provide individual treatment for certain chronic diseases correlated with indigence because of the long duration of disability or the expense of treatment; for example, tuberculosis, mental diseases and venereal diseases. The lack of economic ties between the private practitioners of medicine and the public health departments hampers to some extent the cooperation necessary to the adequate performance of their several functions and gives rise to friction. Members of

medical societies are enjoined by the American Medical Association to combat any activity which comes within its definition of "state medicine," which excludes all public health activities that are not approved by the county medical society.

A formidable competitor to private practise has appeared in the private group clinic. There are now in the United States approximately 200 such clinics, most of which have been organized since the World War. A number of physicians, among whom the main specialties are usually represented, sell their services as a group, pool their income, share buildings and equipment and employ a business manager and clerical staff to run the administrative side of their joint practise. Many clinics sell complete medical service, including preventive care, for a fixed monthly or annual fee. The advantages of this form of organization over individual private practise are many. The patient, instead of going from specialist to specialist, with each consultation involving a separate financial transaction, receives all the attention he needs in one place for an inclusive charge. Under the periodic payment plan he knows in advance what his medical expenses for the year will be and is relieved of the fear of the sudden necessity of meeting a large medical bill made up of physicians' fees, nurses' fees and hospital charges. The physician is provided with adequate equipment without prohibitive cost to himself, his time is more fully and effectively utilized than in private practise, and he feels free to consult his colleagues without embarrassment and without involving his patient in additional expense. The costs of production are minimized through the full utilization of personnel and facilities, and research is made easier through the accumulation of a large number of records. The conservative elements in the medical profession oppose group clinics as "mass produced medicine" and declare that private initiative is destroyed and the patient less carefully served. Certain endowed clinics which accept paying patients are condemned also as unfair forms of competition; but since these organizations meet a public need which private practise seems ill adapted to supply, they will probably continue to receive financial support until some equally satisfactory substitute is found. Industrial health services and university health services encroach further upon the field of private practise, providing a comprehensive medical service for an inclusive and usually modest fee.

Government health insurance as a device for securing medical service for the lower income groups not adequately served by private practise does not exist in the United States; in all European countries, however, health insurance is an aspect of social insurance legislation. The national systems of health insurance in Europe, whether voluntary or compulsory, are administered largely through the sickness insurance societies or funds which were already functioning and which constituted an important vested interest when the legislation was introduced. Nearly all the voluntary societies now receive financial assistance from the state and from the employers; as the importance of the state contribution grows, the autonomous, fraternal character of the societies is weakened. Further developments tending to reduce the power of the societies are the increasing stress upon medical benefits, and the growing interest and influence of the medical professions, which had not participated actively in the formulation of the earlier legislation. All systems of health insurance pay cash benefits and provide some services; but the size of benefits, the range of medical services, the size and sources of contributions and the form of contract with the medical professions vary widely and are moreover in constant process of change within each country (*see* HEALTH INSURANCE). Twenty-five countries had compulsory systems and fifteen had voluntary systems in 1930; the tendency has been toward compulsory systems. All schemes include only persons below a specified income level. Contributions are generally drawn from the insured, the employer and the states, the employer acting as the collecting agent; only Rumania has charged the whole cost of insurance to the workers. The Swiss cantons divide the cost between the insured persons and the local treasuries which receive subsidies from the state; Portugal exacts contributions from all employed persons, regardless of income, but pays benefits only to the lower income groups. Except in Great Britain, the Irish Free State and some cantons of Switzerland, the contributions are graduated according to income; in these countries all the insured pay a flat rate. Payment to the practitioner for medical services is made either on a capitation basis or with separate fees for each service rendered, or more rarely a physician is employed on a salary basis. Relations between the medical professions and the insurance societies are best in countries where the remuneration of physicians is fixed or is con-

trolled by the physicians, as in England and Denmark.

In countries which have not made membership in a health insurance society compulsory for all below a certain income level the contributions of the state toward the expenditures of the existing voluntary societies are high. In Belgium 12.9 percent of the population is covered by health insurance, and the state contributes 39.2 percent of the total cost. In Sweden 15 percent of the population is included, and the state contributes 17.8 percent of the cost. In Switzerland 37.1 percent of the population is covered, and the state contribution is 31.3 percent. The Danish scheme includes 45 percent of the total population, which is a larger proportion than that of any country having compulsory insurance, and the state contribution is 50.3 percent of the whole cost. The voluntary character of the Danish scheme is largely illusory, participation being fostered by governmental pressure through disabilities imposed on persons who receive any form of relief.

The insurance of employed persons does not go far toward providing adequate medical care in the less industrially developed countries, as is shown by the figures for Bulgaria and Poland in Table II. In Germany the insured population receives nearly complete medical care, including hospitalization and specialist services, and these services are extended to the families of the insured. The English scheme does not include the family of the insured, and only general practitioner services and medicines are universally provided, although certain societies give in addition ophthalmic and dental care. The total expenditure for sickness relief in Germany in 1929 was $415,000,000, of which $172,000,000 was for cash payments to the insured, $98,000,000 for medical fees, $19,000,000 for dentistry, $57,000,000 for drugs and appliances, $65,000,000 for hospitalization and $3,000,000 for other services. In England and Wales in 1930 the payments to 15,714 physicians for services to the insured totaled £7,196,670; 10,223 chemists' shops received a total of £2,335,270.

TABLE II
STATISTICS OF INSURED PERSONS

COUNTRY	COMPULSORILY INSURED (PERCENTAGE OF EMPLOYED POPULATION)	TOTAL INSURED (PERCENTAGE OF TOTAL POPULATION)
Austria (1925)	75.00	34.30
Bulgaria (1925)	56.34	4.74
Czechoslovakia (1924)	65.54	19.25
Germany (1925)	76.80	32.00
Great Britain (1921)	86.40	35.20
Hungary (1924)	44.00	11.65
Norway (1920)	73.10	21.30
Poland (1926)	44.40	7.00

Source: International Labour Office, *Compulsory Sickness Insurance*, Studies and Reports, ser. M., no. 6 (Geneva 1927) p. 158–59.

Public opinion in the countries which have adopted health insurance is almost unanimously in favor of its continuance. Cash benefits to compensate for loss of earnings during illness have remedied an important source of financial insecurity threatening the wage earner. Although the adequacy of the care received varies and generally leaves much to be desired, there is no doubt that wage earners are incomparably better served than they were before the adoption of insurance. The medical profession has gained economically through greater security and increased effective demand for its services. The average income of doctors from their insurance practise in England and Wales was £458 in 1930, an amount which is supplemented by the returns from private practise. A comparison of incomes of doctors in the German insurance system with those of the physicians in Detroit studied by the Committee on the Costs of Medical Care showed that when these are adjusted for the difference in cost and standard of living in the two countries, incomes were as high in Germany as in the United States.

The advances in medical science have introduced strains and incongruities in the field of health insurance as well as in private practise. As hospitalization increases in importance, the self-sufficiency of insurance schemes is reduced: their medical services must rely upon the use of expensive hospital facilities, which must also be used by public health authorities in the provision of medical care to the indigent and by physicians treating private patients. Marked confusion in economic organization results. In Denmark the state or local government provides hospitals, offering their facilities at less than the running cost to the insurance societies, which are already heavily subsidized by the state; hospital doctors receive a government salary and private practitioners lose their patients' fees when they send them into the hospitals. In England, where no hospitalization is provided in the insurance benefits, voluntary hospital insurance societies, comparable to the friendly societies which preceded the National Insurance Act, are growing in number. Meanwhile the voluntary hospitals supported by charitable contributions have become increasingly incapable of meeting

the growing demand for hospital care, and the government supported hospitals have steadily enlarged their capacity. The economic and medical disadvantages of private practise and individual payment affect the non-insured persons of moderate income no less in the countries which have a system of health insurance than in the United States. Although insurance would seem favorable to a more effective application of preventive medicine than is possible under the system of private practise, there has so far been little progress in this direction. Contrary to expectations, the amount of recorded sickness and the number of insurance claims have shown a steady increase. The augmented demand for service stimulated by the removal of financial deterrents, coupled with the increasing costs of medical care as technology advances, and the recent decline in contributions due to depressed economic conditions have resulted in a severe strain on insurance funds, especially in Germany. Both from the point of view of the adequate utilization of medical technology to promote and maintain public health and from the point of view of economic and administrative efficiency, it would seem desirable to make insurance responsible only for the financial provision against wage loss due to sickness and to provide medical services to the entire population under some unified and adequate scheme independent of the insurance against loss of wages.

The U.S.S.R. is as yet the only country which has recognized that the free provision of medical services to all the people is a responsibility of the state, on a par with the responsibility of government for education. Soviet medicine is being reorganized in accordance with the following principles: the unification of all health services; the accessibility of good medical care to all the people; complete free medical service for all; well trained personnel; and an emphasis on prevention. The dependence of rational medicine on an intelligent public is recognized, and an intensive medical educational program is under way. The ideal of free and adequate medical care for all the people is by no means realized as yet largely because of the shortage of trained physicians, who numbered approximately 84,000 in 1931. The problem of rural medicine remains acute, since only one fifth of the physicians are in rural communities; but the government is attempting to serve the remote rural areas by establishing health stations in agricultural collectives and by organizing traveling clinics. However far the present provision of medical care to the Russian people falls short of the Soviet ideal, the U.S.S.R. has at least removed all institutional obstacles which stood in the way of an adequate utilization of the vast potentialities for human well being inherent in modern medical technology.

LEWIS WEBSTER JONES
BARBARA JONES

See: HOSPITALS AND SANATORIA; CLINICS AND DISPENSARIES; MORBIDITY; MORTALITY; PUBLIC HEALTH; COMMUNICABLE DISEASES, CONTROL OF; TROPICAL MEDICINE; MATERNITY WELFARE; BIRTH CONTROL; PROSTITUTION; INDUSTRIAL HYGIENE; MENTAL DISORDERS; PSYCHIATRY; PSYCHOANALYSIS; CHRISTIAN SCIENCE; WARFARE; RED CROSS; LIFE EXTENSION MOVEMENT; SANITATION; HEALTH EDUCATION; HEALTH CENTERS; HEALTH INSURANCE; MEDICAL JURISPRUDENCE; MEDICAL MATERIALS INDUSTRIES; PROFESSIONS; PROFESSIONAL ETHICS; DENTISTRY; NURSING; SOCIAL WORK; SPECIALIZATION; FEE SPLITTING; SCIENCE; RESEARCH; BIOLOGY; ALCHEMY; MAGIC.

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MEHEMET ALI (Mohammed 'Ali) (1769–1849), Egyptian ruler. As an uneducated Turkish soldier of Albanian descent Mehemet Ali entered the military campaign against Napoleon in Egypt in 1799. He was a shrewd politician and in 1805 rose to be pasha of Egypt; in 1811 he secured his position by massacring the Mameluke chiefs, whose line had ruled Egypt since 1250. Using the profits made in agricultural trade during the Napoleonic wars he expanded his army and navy, which he organized on European lines with a predominantly Egyptian personnel. His son Ibrāhīm led his troops and ships to victories in Nubia, Arabia and Greece until the fleet was destroyed in 1827 at Navarino. The refusal of Sultan Maḥmūd II to give him the promised governorship of Syria led in 1833 to a war in which he was victorious. In another campaign in 1839 he could easily have taken Constantinople except for the intervention of Russia and England, anxious to secure control of trade routes through the Near East. Mehemet Ali had French support, and from 1839 to 1841 general European war loomed. When France yielded he was obliged to draw back into Egypt, to which his hereditary right under Turkish suzerainty was recognized. He also laid the basis of Egyptian domination of the Sudan.

Mehemet Ali reorganized not only the military and naval forces of Egypt but also its government, destroying the power of the provincial beys and centralizing political control. He adopted many French administrative practises, reorganized the taxation system, developed the harbor of Alexandria and the system of irrigation and introduced land reforms, new crops, new commercial methods, model factories and schools. He was the founder not merely of the present Egyptian royal house but of modern Egypt, which became the leading nation of the Moslem world.

ALBERT H. LYBYER

Consult: Dodwell, H. H., *The Founder of Modern Egypt* (Cambridge, Eng. 1931); Cameron, D. A., *Egypt in the Nineteenth Century* (London 1898) chs. iv–xx; Young, George, *Egypt* (London 1927) p. 35–63; Chirol, Valentine, *The Egyptian Problem* (London 1920) ch. i.

MEHRING, FRANZ (1846–1919), German socialist historian and politician. During his early years Mehring gained distinction as a liberal journalist and critic of the imperial policy of Bismarck. Gradually, however, as he came to lose faith in the premises of political reformism, he was weaned from bourgeois ideology. In the course of a sensational attack in 1890 on the bourgeois press in Berlin he openly espoused socialism, and by aligning himself from the outset with the extreme revolutionary wing of the Social Democratic party he came progressively under the sway of Rosa Luxemburg. During the World War Mehring sharply attacked the policy of cooperation with the government pursued by the moderate Social Democrats, and along with Rosa Luxemburg was instrumental in laying the foundation for the Spartakusbund. As representative of a Berlin electoral district in the Prussian *Landtag* he fought all compromise programs and until his death, brought on by the assassination of his friends Karl Liebknecht and Rosa Luxemburg, was an outstanding intransigent leader.

Mehring's peculiar significance as a Marxist scholar lies in the fields of historiography and literature. His numerous writings, which display an unusual literary and polemic skill, constitute the most versatile application of historical materialism. His history of the Social Democratic movement in Germany is essentially an analytical survey of the political, social and intellectual evolution of Germany prior to 1890. His biography of Karl Marx, thorough and objective in its approach, reestablished the reputations of Lassalle and of Bakunin, who had suffered severely at the hands of Marxist partisans. In Marx, Mehring saw primarily the revolutionary fighter, whose theoretical works were aimed at bolstering proletarian ideology as a means of stimulating the class struggle. As a literary critic

and historian Mehring performed the pioneer service of correlating literature with the underlying social and economic relationships of the period. While recognizing the personal greatness of a Goethe or a Schiller and the spontaneous power of poetical genius in general, he threw his chief emphasis on the thousand threads which connect the literary creation with the material environment of its creator. The range of his interests and knowledge as well as the sureness of his methodology elevates Mehring to a position as yet unrivalled among the historical materialists.

ARTHUR ROSENBERG

Works: *Gesammelte Schriften und Aufsätze*, ed. by Eduard Fuchs, vols. i-vi (Berlin 1929–31); *Geschichte der deutschen Sozialdemokratie*, 2 vols. (Stuttgart 1897–98; 12th ed., 4 vols., 1922); *Karl Marx, Geschichte seines Lebens* (Leipsic 1918; 4th ed. by E. Fuchs, 1923); *Deutsche Geschichte vom Ausgange des Mittelalters*, 2 vols. (Berlin 1910 11); *Die Lessing-Legende* (Stuttgart 1893, 9th ed. Berlin 1926).

Consult: Schwabe, F., "Aus den Briefen Rosa Luxemburgs an Franz Mehring" in *Internationale Zeitschrift fur Praxis und Theorie des Marxismus*, vol. ii (1923) 67–72; Harden, Maximilian, *Apostata* (5th ed. Berlin 1892) p. 69–84; Romein, J., in *Archiv für die Geschichte des Sozialismus und der Arbeiterbewegung*, vol. xiii (1928) 80–103.

MEITZEN, AUGUST (1822–1910), German agrarian historian and statistician. After a long career as a public official Meitzen was commissioned in 1865 by the ministers of finance and agriculture to prepare a comprehensive description of the exploitation of landed property in Prussia and an evaluation of the agricultural taxation then in force. This study, *Der Boden und die landwirtschaftlichen Verhältnisse des preussischen Staates* (4 vols., Berlin 1868–71; 4 additional vols., Berlin 1894–1908), was based on existing official material, particularly the results of the cadastral survey carried out in accordance with the land tax legislation of 1861. In 1868 Meitzen occupied a leading position in the Prussian statistical bureau and after 1872 in the statistical bureau of the Reich. From 1875 he was likewise professor at the University of Berlin.

Meitzen's fame as an agrarian historian was established by his *Siedelung und Agrarwesen der Westgermanen und Ostgermanen, der Kelten, Römer, Finnen und Slawen* (3 vols. and atlas, Berlin 1895). This work distinguished for its wide scope discusses the early forms of agriculture and settlement in northern Europe. It makes extensive use of a new historical source and boundary or field maps indicating the division of village lands into fields for various purposes as well as the topography and internal plan of different types of village settlements. From a study of these maps Meitzen attempted to deduce the racial descent and customs of the early settlers and to describe the primitive forms of their agriculture. Although others before him, for example, Georg Hanssen, had worked with such maps, Meitzen was the first to collate them systematically for entire regions. Meitzen's views on the geographical distribution of the early tribes have remained unchallenged; but his theory concerning the origin of agriculture, particularly that of the division of the land into furlongs (*Gewanne*), has been questioned by later writers.

Among Meitzen's other works his *Geschichte, Theorie und Technik der Statistik* (Berlin 1886, 2nd ed. Stuttgart 1903; tr. by R. P. Falkner, American Academy of Political and Social Science, *Annals*, vol. i, 1891, supplement) deserves special attention.

AUGUST SKALWEIT

Consult: Grossman, F., review of Meitzen's *Siedelung und Agrarwesen* in *Schmollers Jahrbuch*, vol. xxii (1898) 1–40; Inama-Sternegg, K. T. von, in *Jahrbücher für Nationalökonomie und Statistik*, vol. lxvii (1896) 751-60; Kötzschke, R., in *Deutsche Geschichtsblätter*, vol. xi (1910) 273–78; Knapp, Georg Friedrich, *Grundherrschaft und Rittergut* (Leipsic 1897); Ashley, W. J., "Professor Meitzen's 'Settlement of the Germans'" in his *Surveys Historic and Economic* (London 1900) p. 115–31.

MELANCHTHON, PHILIPP (1497–1560), German religious leader and humanist. While professor of Greek at Wittenberg Melanchthon, a typical German humanist, became a disciple of Luther and in 1521 produced *Loci communes* (1521), which systematized the underlying ideas of the Reformation into a classical theory. When Erasmus and other humanists, repelled by Luther's antipathy to culture and rationalism, finally cast their lot with Catholicism, Melanchthon broke with them. But Erasmian ideas continued to influence him throughout his life and during the Peasants' War his humanistic inclinations reemerged under the guise of Lutheranism. Luther repudiated the revolt because he objected to the invocation of the Gospel for worldly ends; Melanchthon attacked it with scarcely less bitterness as a disavowal of intellectualism and culture. The misconceptions which long prevailed in Germany concerning Thomas Münzer's character and aims originated in Melanchthon's hostile portrayal. Failing in

his unremitting efforts to compromise with the old church he had the leading part in the drafting and defense of the Augsburg Confession. After Luther's death he became the leader of German Protestantism, a role for which he was hardly suited.

Melanchthon's significance for German intellectual and social history lies in the fact that he was the connecting link between Protestantism and humanism and that his influence tempered the hostility of Protestantism to secular culture. Aristotelianism, at times decried by Luther as the embodiment of base human reason, was kept alive in Melanchthon's philosophy, which until the eighteenth century provided the foundation for German culture and political thought and which through preserving rationalistic currents in German Protestantism helped prepare the way for the Enlightenment. Because Melanchthon without expressly subscribing to the doctrine of justification by works had more faith than Luther in the power of human nature for good, his political theory assigned more importance to man made law and to the enforcement of morality and "discipline" by the civil government. The idea of a natural law and a natural order ordained by God and comprehensible to human intellect has a prominent place in his thought. The political authority had a function more significant than merely serving the interests of "peace and the belly": it was the guardian of the Decalogue in so far as the latter applied to external conduct. Since the observation of most of the fundamental tenets of the Protestant religion was included under the category of external conduct, Melanchthon's system left little room for tolerance. Luther's passionate hatred for the standards and practises of the new commercial civilization was not shared by Melanchthon, who revered Roman law and considered it *plenum humanitatis et aequitatis*. Usury, according to Melanchthon, should be punished by the state only if it exceeded a certain amount; thus he followed the tendency of late scholasticism in narrowing the concept of usury to payments on loans for immediate consumption. His work in the field of German education may be interpreted in terms of his humanistic ideas. Although he followed lines marked out by his predecessors Melanchthon, who has been called the "preceptor of Germany," really inaugurated the construction of the modern German school system: he developed the three-class Latin school and contributed to the organization of the universities, especially by giving to the philosophical faculty for the first time a status entirely independent of the theological faculty.

MICHAEL FREUND

Works: Melanchthon's works are collected in *Corpus reformatorum*, ed. by C. G. Bretschneider and H. E. Bindseil, vols. i–xxviii (Halle 1834–60), vol. xvi of which contains his ethical and political writings, including his *Commentarii in aliquot politicos libros Aristotelis*, p. 416–51; *Supplementa melanchthoniana: Werke . . . die im Corpus Reformatorum vermisst werden*, ed. by Verein für Reformations-Geschichte, Melanchthon-Kommission, vols. i–ii, v–vi (Leipsic 1910–26).

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MELCHETT, LORD, ALFRED MORITZ MOND (1868–1930), British capitalist and statesman. Mond, the son of a famous German Jewish chemist, was born in Lancashire, educated at Cheltenham and at Cambridge and Edinburgh universities and was called to the bar. In 1895 he entered his father's chemical manufacturing business as a director of Brunner, Mond and Company and he subsequently joined the boards of the Mond Nickel Company, Ltd., and other firms of the Mond group. A Liberal member of Parliament from 1906 until 1923, he followed Lloyd George in the split in the party at the time of the World War. He was first commissioner of works from 1916 to 1921, when he became minister of health. In the latter role he undertook drastic curtailment of the government's post-war housing program as an economy measure. Reelected to Parliament in 1924, Mond disagreed with Lloyd George's land policy and he joined the Conservative party in 1926. He also argued that the needs of post-war industry would be best served by Conservative policies, and he ardently advocated closer trade relations within the empire. He was made a baronet in 1910, a member of the Privy Council in 1913 and a peer in 1928.

Mond was important chiefly as an industrialist. In 1926 he was the leader in forming the $380,000,000 Imperial Chemical Industries, Ltd., by combining Brunner, Mond and Com-

pany with the United Alkali Company and the British Dyestuffs Corporation; in 1928 the new company absorbed a number of other firms. A strong advocate of rationalization in industry, he carried through in the Imperial Chemical Industries the outstanding British example of post-war rationalization. This was one of the few concerns to provide some form of compensation for workers displaced by rationalization. After the general strike of 1926 Mond took the initiative in trying to bring about improved relations between employers and trade unions and led a group of large employers into negotiations with the Trades Union Congress General Council. The resulting Mond-Turner Report issued in July, 1928, proposed the establishment of powerful standing joint boards for consultation between central employers' organizations and unions. The scheme was approved in general by the unions but was rejected by the Federation of British Industries and the National Confederation of Employers' Organisations in favor of a largely ineffective scheme of occasional consultation. Mond's projects for rationalization and reorganization of industry on a national or even imperial scale were based on an essentially nationalist and capitalist philosophy of collaboration between owners and workers, which became known as Mondism. Mond wrote several interesting technical works on the gas industry and books on industrial relations and economic matters.

In his early life Mond maintained intimate ties with the country of his family's origin. He showed little interest in Jewish affairs until the outbreak of the war, when he became an active supporter of Zionism, which was working in close contact with the imperial diplomatic and military staffs. His most concrete interest in Zionism was in connection with the establishment of Palestine Potash Limited, a British corporation for the development of the mineral resources of the Dead Sea. He was a leading factor in establishing the Jewish Agency for Palestine, which superseded the Zionist Organisation in 1929.

G. D. H. COLE

Important works: *Questions of Today and Tomorrow* (London 1912); *Industry and Politics* (London 1927); *Imperial Economic Unity* (London 1930).

Consult: *Jewish Chronicle*, no. 3221 (1931) 10; Armstrong, H. E., "The Monds and Chemical Industry: a Study in Heredity" in *Nature*, vol. cxxvii (1931) 238–40; "The Meaning of Lord Melchett" in *Spectator*, vol. cxlvi (1931) 4–5; Selekman, B. M. and S. K., *British Industry Today* (New York 1929) ch. viii.

MÉLINE, JULES (1838–1925), French statesman. Méline was already known as a republican when he was a law student at Paris. He was appointed to the National Assembly in 1872 and was thereafter always returned by his native Lorraine, first as deputy and later as senator. From 1883 to 1885 he served as a minister in the cabinet of Jules Ferry; later in 1896, regarded as one of the principal leaders of the moderate republicans, he became president of the council and supported the Right in order to combat the radicals. For a long time his ministry had a strong majority in both chambers, but when the Dreyfus affair broke out, Méline refused to support a revision of the trial and after the elections of 1898 he was obliged to resign his position. He served again as minister for some months during the World War.

Méline's reputation is due much more to his economic than to his political role. He was in fact the leader of the protectionist movement and the great defender of agriculture. As secretary general of the customs commission he put through the Chamber of Deputies the tariff of 1892, representing a definitive break with the free trade system inaugurated in 1860. He held that the protective system, necessary as it was for French industry, was even more important for agriculture, which remains the principal wealth and the chief occupation of France. The three times he served in the ministry were as minister of agriculture. He inaugurated or developed many practical reforms, especially those which aimed at the organization of farm credit and at benefiting the syndicates of agricultural proprietors. His persevering devotion to this cause brought him real popularity in his later years even among his opponents.

GEORGES WEILL

Important works: *Le retour à la terre et la surproduction industrielle* (Paris 1905, 6th ed. 1912), tr. by Justin McCarthy (London 1906); *Le salut par la terre et le programme économique de l'avenir* (Paris 1919, 2nd ed. Paris 1920).

Consult: Lachapelle, Georges, *Le ministère Méline* (Paris 1928); Hanotaux, Gabriel, in *Revue des deux mondes*, 7th ser., vol. xxxi (1926) 440–53.

MELLAERTS, JACOB FERDINAND (1845–1925), Belgian cooperative leader. As curate of a parish composed of industrious small cultivators Mellaerts observed the sufferings resulting from the current agricultural crisis and realized the necessity of modernizing agricultural methods. He organized his parishioners into an agricultural syndicate and then after resigning as curate

settled in Louvain and devoted himself to the creation of a vast organization of Catholic farmers to promote their social and moral as well as material and professional interests. He was given the necessary support by G. Helleputte and F. Schollaert, with whom he founded the Boerenbond Belge (League of Peasants of Belgium) at Louvain in 1890. Mellaerts served as its first secretary general. In 1902, when he retired, the Boerenbond had a membership of 20,000 grouped in 360 syndicates, or local guilds; it published a monthly organ, instituted mutual farm insurance and conducted two important institutions: a bureau to furnish the local syndicates with raw materials and agricultural machinery and to sell farm products and a central savings and credit bank, which in 1902 had two hundred affiliated local banks, managed according to the Raiffeisen system and of great importance.

The work of Mellaerts and his organization prevented socialism from gaining a foothold among the agricultural population even though it consisted for the most part, particularly in the Flemish portion of the country, of small cultivators. At the present time the great majority of the Flemish agricultural population is organized under the direction of the Boerenbond.

E. LUYTGAERENS

Chief work: *Les caisses rurales d'épargne et de crédit d'après le système Raiffeisen*, tr. from Flemish ms. (Louvain 1894).

Consult: Baudhuin, F., "Le Boerenbond belge" in *Revue économique internationale*, vol. xxii (1930) 113–37; Lugan, A., *Origine et organisation du Boerenbond* (Paris 1925).

MELLO FREIRE, PASCHOAL JOSÉ DE (1738–98), Portuguese jurist. At the age of twelve Mello Freire left his native village of Ancião for Coimbra, where he studied law, receiving his degree of doctor of jurisprudence in 1757. He was appointed to the chair of Portuguese law and legal history at the University of Coimbra in 1772 at the time of Marquis de Pombal's famous reform which eliminated scholasticism and Bartolism in legal education and introduced the study of national alongside Roman law.

In the midst of the great decadence and confusion which characterized Portuguese official instruction in all branches of learning Mello Freire's work stands out as the realization of Pombal's reforms in the field of jurisprudence. He reduced the disconnected multitude of laws to a synthetic, scientific and easily understood system, which he related to its historical origins. He showed an aptitude for dealing systematically with legal facts and theory and was the first jurist in Portugal to study the history of the native law. On this subject he wrote the authoritative *Historiae juris civilis lusitani* (Lisbon 1794). His *Institutiones juris civilis lusitani* (4 vols., Lisbon 1789–93) and *Institutionum juris criminalis lusitani liber singularis* (Lisbon 1794) were the first systematic treatises on Portuguese civil and criminal law. Mello Freire enjoyed a great reputation and during the reign of Queen Maria I the government appointed him a member of a commission to submit a project for a new code of public law to replace the second part of the old *Ordenações* of the nation. He was also judge of the Court of Appeal (Casa da Supplicação). In his work he appeared a fervent supporter of the absolute monarchy; as a criminologist he was protagonist in Portugal of the new revolutionary spirit of Beccaria and Filangieri, who fought for the humanization of punishment.

LUIS CABRAL DE MONCADA

Consult: Merêa, M. P., *Estudos de história do direito* (Coimbra 1923) p. 26–29; Braga, T., *Historia da Universidade de Coimbra*, 4 vols. (Coimbra 1892–1902) vol. iii, p. 745–46.

MELON, JEAN FRANÇOIS (1675–1738), French economist. Melon was an official in the French financial administration, working at different periods with Duc de La Force, d'Argenson, Abbé Dubois and Law. His *Essai politique sur le commerce* (n.p. 1734, 2nd enlarged ed. 1736, 5th ed. 1761; tr. by D. Bindon, Dublin 1738) is noteworthy not only because it constitutes the first systematic presentation of mercantilist doctrines to appear in France but also because it adumbrates the transition to physiocracy. Melon insists upon the primary importance of agriculture, advocates freedom of trade in grain and even formulates the general principle of economic liberalism, although at the same time he urges the prohibition of exports in raw materials and the restriction of imports in manufactured goods. While assigning to money a prominent role in the creation of national wealth he declares with no less vigor that wealth itself consists of consumable goods and that money is only its symbol. He was in general a metallist and an adherent of the quantity theory, but with the significant reservations more or less common to the branch of neomercantilistic thought which was most directly influenced by Law. It was, however, another neomercantilist, Dutot, who became his most persistent oppo-

nent in the prolonged controversy which the book provoked. Melon, who had inclinations toward the paradoxical, aroused Dutot's criticism by advocating a deliberate increase of the supply of money through such means as devaluation and the issuance of paper money and of certificates of indebtedness. According to his arguments such measures would both favor debtors and stimulate production; and calling attention to the factor of velocity in the operation of the quantity theory he sought to show that a rise in prices would be checked by the increase in production. A careful study of the subject led him to the view that the rate of exchange merely reflected the state of the balance of accounts, exercising no determining influence upon it; in this connection he gave a clear formulation of the theory of gold points. Melon, who was directly influenced by Bernard de Mandeville, is also well known as an apologist for luxury and as an exponent of the materialistic conception of economics.

ROGER PICARD

Consult: Bouzinac, J., *Les doctrines économiques au XVIIIe siècle: Jean-François Melon, économiste* (Toulouse 1906); Harsin, Paul, *Les doctrines monétaires et financières en France du XVIe au XVIIIe siècle* (Paris 1928) pt. vi, ch. iii; Dionnet, Georges, *Le néomercantilisme au XVIIIe siècle et au début du XIXe siècle* (Paris 1901) ch. ii.

MENCIUS (372–288 B.C.), Chinese moralist and political theorist. The name is Latinized from Mêng Tzŭ, Master Mêng, the full name in Chinese being Mêng K'o. Mencius was born in the state of Lu, now the province of Shantung. The descendant of a family of petty nobles, he was educated in the doctrines advocated by Confucius, which were preponderant in Lu at that time, possibly studying with the disciples of Tzŭ Szŭ (K'ung Chi), Confucius' grandson. Later he came in contact with other influences, particularly the Taoist metaphysics and the speculations of the dialecticians, which left a considerable trace on his philosophy. Mencius seems to have supported himself at first by founding a school; later like many wandering politicians of his time he traveled to various courts offering his services as a councilor, with varying but not lasting success.

Mencius was a political thinker rather than a philosopher; he wished to bring about better government in the face of the prevailing political anachry. He had the courage to speak very frankly to the princes whom he met and to point out their moral duties toward their subjects. "The people are the most important element in a nation and the sovereign is the lightest," and "Heaven sees according as the people see; Heaven hears according as the people hear," are some of his well known sayings. It should not be understood, however, that he wished the people to take an active part in the government. "Some men labour with their minds, and some with their strength. Those who labour with their minds govern others; those who labour with their strength are governed by others." A prince who falls short of his duties has forfeited his right to govern and may be deposed by the nobles. On the other hand, Mencius is convinced that the good moral example of the ruler will have a reforming influence on his subjects. If circumstances are favorable, people are prone to do good rather than evil. "The tendency of man's nature to good is like the tendency of water to flow downwards." Mencius was the first to formulate clearly this view of human nature, which is his most characteristic and most important contribution to Chinese ethics. Goodness expresses itself in four chief virtues: *jên*, altruism; *i*, the sense of equity; *li*, the sense of reverence; *chih*, the knowledge of good and evil. Mencius was a firm believer in the benefits of education and culture. He favored the development of commerce unhampered by taxation. In his land policy he advocated the return to the old communal system, known as the *Ching*, or "well system," in which the land was cultivated in common and a kind of tithe paid to the lord. He vigorously refuted anticultural tendencies like those of the Taoist Hsü Hsing, who preached the return to the simple life in which everybody should manufacture his own necessities. Mencius had great dialectical powers and he often combated other views, notably those of Mo Ti, whose leading principle was "equal love for all," and those of Yang Chu, who was a pronounced individualist and hedonist.

Mencius was brilliant but not profound. For many centuries his influence on the development of Confucianism was comparatively small. Others, like Hsün Tzŭ, were much more influential. Not until the revival of Confucianism in the Sung dynasty did Mencius attain an exceptional position. The work of Chu Hsi (1130–1200) in particular brought him to the fore; since Chu Hsi, the Book of Mencius, in seven chapters, has always been published, together with the *Lun yü* (the Confucian Analects), as part of the Four Books which were committed to memory by all aspiring to be scholars. In the Confucian

state temples his "soul tablet" was placed with those of Confucius' most beloved personal disciples close to that of the master. His honorary title is the Second Sage.

J. J. L. DUYVENDAK

Works: *Mencius*, tr. by Leonard A. Lyall (London 1932).

Consult: Liang Chi-Chao, *History of Chinese Political Thought during the Early Tsin Period*, tr. by L. T. Chen (London 1930) ch. iii; Thomas, E. D., *Chinese Political Thought* (New York 1927); Suzuki, D. T., *A Brief History of Early Chinese Philosophy* (London 1914); Legge, James, *Life and Works of Mencius*, Chinese Classics, vol. ii (London 1875).

MENDEL, GREGOR JOHANN (1822–84), German naturalist and pioneer in the theory of heredity. Mendel came of small peasant farmers in what was then Austrian Silesia. In 1843 he entered the Augustinian monastery in Brünn to devote his life to the natural sciences. He failed to pass the examinations for a teacher's license at the University of Vienna, but thanks to the connections of his abbot he became a professor at the Realschule of Brünn. Mendel spent his leisure hours in the garden of the monastery experimenting with the crossing of peas and came to discover laws of heredity which modern science has proved to hold for all living beings. These three "Mendelian laws" are as follows: in the first hybrid generation all the individuals exhibit a uniform appearance (law of uniformity); in the second hybrid generation the characters of the parents split up in accordance with the proportion of 1 : 2 : 1 (law of segregation); in all subsequent hybrid generations the characters are inherited independently of one another and combine in hybridization in all possible ways (law of independence).

For these experimental laws Mendel also furnished a theoretical explanation which has been accepted with slight modifications by modern science. This explanation rests on the assumption that to the external characters there correspond inner determinants (called today genes) which are brought together in hybridization and which separate out in a pure and unaltered form when sex cells (gametes) are formed.

The story of the tragic neglect of Mendel's work during his lifetime and of its dramatic rediscovery in 1900 by de Vries, Correns and Tschermak working independently of one another has often been told and need not be repeated here. Suffice it to say that although these scientists rediscovered experimentally the equivalent of Mendel's formulations before they came upon his papers, it was the thoroughness of Mendel's experimental work that provided the true confirmation of their results. Thenceforth Mendel's theories became the corner stone of a new science, which shed a powerful light upon all phases of theoretical and applied biology. Of direct social importance are the applications for plant and animal breeding, where the biologist has been able to operate almost in the manner of a chemist, creating new organic races by combining at will the favorable characters of old stocks. In all the countries of the world and notably in the United States, Germany, Sweden and Russia there exist today institutes of experimental genetics which apply Mendel's principles to improve the quality and the productivity of cultivated plants and domestic animals. Of equal importance is the application of Mendelism by the eugenics movement for the improvement of the human species. It is known today that not only normal human traits but also diseases and afflictions are transmitted in accordance with Mendelian laws. Unfortunately some advocates of eugenics, failing to distinguish between the biological and the cultural or moral phases in complex human situations, have used Mendelism as an apology for a biological and chauvinistic philosophy of history. For this misuse of his doctrine Mendel can scarcely be blamed.

HUGO ILTIS

Consult: Iltis, Hugo, *Gregor Johann Mendel: Leben, Werk und Wirkung* (Berlin 1923), tr. by Eden and Cedar Paul (London 1932); Bateson, W., *Mendel's Principles of Heredity* (new ed. Cambridge, Eng. 1913); Castle, W. E., *Genetics and Eugenics* (4th ed. Cambridge, Mass 1930); Babcock, E. J., and Clausen, R. E., *Genetics in Relation to Agriculture* (2nd ed. New York 1927).

MENDELSSOHN, MOSES (1729–86), German Jewish philosopher. Mendelssohn, who was born in Dessau and received a thorough Jewish religious training, was influenced particularly by the philosophic works of Moses Maimonides. In 1743 he came to Berlin, where he lived in extreme poverty, and in 1750 became a tutor in the house of the silk merchant Isaak Bernhard, whose firm he later entered as a partner. He familiarized himself with western learning, was a lifelong friend of Lessing and achieved a place of high standing in the German intellectual world. In his *Philosophische Gespräche* (Berlin 1755), his *Briefe über die Empfindungen* (Berlin 1755) and his *Philosophische Schriften* (2 vols., Berlin 1761) he elaborated his theory of the autonomy

of the aesthetic and prepared the ground for the aesthetics of Kant and Schiller. His *Abhandlung über die Evidenz in metaphysischen Wissenschaften* (Berlin 1764) won the prize of the Prussian Academy in 1763; later he was elected as a member of this body, but because he was a Jew his appointment was not confirmed by Frederick the Great. Mendelssohn's philosophy of religion is best expressed in his *Phädon* (Berlin 1767; tr. by C. Cullon, London 1789), the classic work of the German Enlightenment, in which he sought to demonstrate the immortality of the soul, and in his *Morgenstunden oder Vorlesungen über das Daseyn Gottes* (Berlin 1785), in which he elaborated an ethical universalism colored by religion.

In Jewish intellectual history Mendelssohn occupies a significant place as being the first Jew in modern times to take so active a share as a Jew in the European culture of his time. Many of his contemporaries did not understand this new type of phenomenon. Thus in 1769 Pastor Johann Kaspar Lavater of Zurich publicly demanded that Mendelssohn either be converted to Christianity or refute it. Mendelssohn explained to him in a letter that his Judaism presented no opposition to his philosophical beliefs. The subsequent Mendelssohn-Lavater controversy had many reverberations and occupied the passionate attention of contemporaries. In a treatise against Charles Bonnet's *Palingénésie* ("Betrachtungen über Bonnets Palingenesie," written in 1770 but published only after his death in *Gesammelte Schriften*, vol. iii, p. 135–76) he defined Judaism in contrast with Christianity. From the general Enlightenment point of view he rejected such basic Christian concepts as those of sin, punishment and salvation as well as all the dogmas which contradict reason.

For all peoples the way to blessedness is open by way of the religion of nature or of reason without special revelation. Judaism, which may be reduced to three basic principles—God, providence and the law—is identical with the religion of nature extolled by the Enlightenment plus the laws and commandments which are obligatory only for Jews. The revelation at Mount Sinai was a revelation not of religion but of law. Mendelssohn further developed these ideas in his most complete work, *Jerusalem oder über religiöse Macht und Judentum* (2 vols., Berlin 1783; tr. by M. Samuels, London 1838). Here the demand of the European Enlightenment for tolerance, for the separation of church and state, received its classical politico-philosophical foundation. The state is concerned only with the actions of men, the church with questions of principle. State and church "must instruct, educate, stimulate and inspirit, but neither reward nor punish, neither compel nor bribe." The church must neither itself nor with the help of the state exercise the right of coercion over its members, and civil rights are independent of religious affiliation.

Moses Mendelssohn is commonly referred to as the father of the Jewish Enlightenment movement (*Haskalah*). Especially important in this connection were his German translation of the Pentateuch and of the *Psalms* in 1783 and his Hebrew commentary to the Pentateuch (*Biur*), which were attacked by extreme orthodox leaders. The Hebrew periodical which Mendelssohn founded, *Koheleth musar*, is significant in the development of the neo-Hebraic renaissance. Despite his religious conservatism his ideas later became the point of departure for the rise of the Jewish Reform movement.

S. RAWIDOWICZ

Works: *Gesammelte Schriften*, ed. by G. B. Mendelssohn, 7 vols. (Leipsic 1843–45). Much more complete is the *Gesammelte Schriften, Jubiläumsausgabe*, ed. by I. Elbogen and others, vols. i–ii, vii, xi, xvi (Berlin 1929–32).

Consult: Kayserling, Moses, *Moses Mendelssohn, sein Leben und seine Werke* (2nd ed. Leipsic 1888), and *Moses Mendelssohns philosophische und religiöse Grundsätze* (Leipsic 1856); Ritter, I. H., *Geschichte der jüdischen Reformation*, 4 vols. (Berlin 1858–1902) vol. i; Strauss, Bruno, and others, *Moses Mendelssohn, zur 200 jährigen Wiederkehr seines Geburtstages* (Berlin 1929); Cassirer, Ernst, "Die Idee der Religion bei Lessing und Mendelssohn" in *Festgabe zum zehn jährigen Bestehen der Akademie für die Wissenschaft des Judentums* (Berlin 1929) p. 22–41; Rawidowicz, S., "Moshe Mendelssohn" in *Hatekufah* (in Hebrew), vol. xxv (1929) 498–520, and vol. xxvi–xxvii (1930) 547–94; Rawidowicz, S., "Zum Lavater-Mendelssohn-Streit," "Zu den 'Gegenbetrachtungen über Bonnets Palingenesie'," and "Zu 'Ritualgesetze der Juden'" in Mendelssohn's *Gesammelte Schriften, Jubiläumsausgabe*, vol. vii, p. xi–clvii; Englander, H., "Mendelssohn as Translator and Exegete" in Hebrew Union College, *Annual*, vol. vi (1929) 327–48.

MENDICANT ORDERS. *See* RELIGIOUS ORDERS; BEGGING.

MENDOZA, ANTONIO DE (1490–1552), Spanish colonial administrator. Mendoza, a Castillian nobleman, was employed on various diplomatic missions during his early career. He reached Mexico city in 1535 as the first Spanish viceroy on the American continent. This position was introduced into the New World when

the Spanish authorities became convinced that the semicivilized subject people of New Spain and its turbulent conquerors could be governed only by a person close to the throne who should be vested with great authority as the representative of the king. Mendoza held office until 1550; from 1551 to 1552 he served as viceroy of Peru. In the exercise of his manifold political, ecclesiastical, economic and general welfare functions he established the prestige of his office, while the policies he formulated inaugurated a stable system of government which lasted, with some modifications, through the colonial era. New Spain also made significant beginnings in agriculture, industry and trade. Indigenous crops were encouraged and European plants—wheat and sugar—and animals were introduced in large numbers; great ranches and plantations soon came into existence. On the basis of support given to the breeding of merino sheep, the silkworm and the mulberry an extensive textile industry developed in the towns. In 1548 there began an era of extremely active silver mining. Progress in arts and letters was rapid also. In 1536 Mendoza caused to be set up the first printing press of the New World; printing of books began in 1539.

Mendoza endeavored to secure better treatment for the natives, to check abuses in personal service, in the mines and under the encomiendas and to prevent the extension of chattel slavery. He regulated the status of Indian villages, their government and their lands and aided the church in its efforts to provide educational facilities for the Indian nobility and foundling mestizos. But good intentions were frequently crossed by the demands of the king's exchequer and by the necessity of an adequate labor supply. Because of the bitter opposition of the colonists Mendoza brought about the suspension of the famous New Laws of 1542–43 for the liberation of the natives. As a result of this and other arrangements the fundamental questions of class relations were settled by the time he relinquished his post.

CLARENCE H. HARING

Works: "Relación, apuntamientos y avisos que por mandado de S. M. di (yo D. Antonio de Mendoza) al Sr. D. Luis de Velasco" in *Instrucciones que los vireyes de Nueva España dejaron a sus sucesores* (Mexico 1867) p. 227–40.

Consult: Aiton, Arthur Scott, *Antonio de Mendoza, First Viceroy of New Spain*, Duke University, Publications (Durham, N. C. 1927); Pérez Bustamante, Ciriaco, *Los orígenes del gobierno virreinal en las Indias españolas, Don Antonio de Mendoza, primer virrey de la Nueva España (1535–1550)* (Santiago, Spain 1928); Priestley, H. I., *The Mexican Nation, a History* (New York 1923); Simpson, Lesley Byrd, *The Encomienda in New Spain*, University of California, Publications in History, vol. xix (Berkeley 1929).

MENÉNDEZ Y PELAYO, MARCELINO (1856–1912), Spanish historian. Menéndez y Pelayo was educated at the universities of Barcelona, Madrid and Valladolid. He taught at Madrid from 1878 to 1898 and from 1898 to 1912 directed the Biblioteca Nacional. Among the scholars who influenced his career were José Ramon Luanco, the philosopher Francisco Llorens, the literary historian Manuel Milá y Fontanals and particularly Gumersindo Laverde y Ruiz, who sought to rehabilitate Spanish philosophy.

A polemic between liberals and reactionaries was the immediate inspiration for two of Menéndez y Pelayo's most important works, *La ciencia española* (1876) and *Historia de los heterodoxos españoles* (3 vols., 1880–81). In these two books the author attempts to ascertain Spanish traits, to note their characteristic manifestations in philosophy in order to demonstrate their attachment to orthodoxy and to provide a basis for an indigenous discipline designed to replace the current foreign, and therefore sterile, importations, and to catalogue their scientific and intellectual accomplishments particularly during the Renaissance. At the same time he defends the Inquisition from the charge of having adversely affected intellectual productivity. The Spanish genius as conceived by Menéndez y Pelayo is manifested in all the peoples who have inhabited the peninsula—Roman, Moslem, Jewish and Christian—as well as in those of Hispanic origin. Menéndez y Pelayo's later works were concerned primarily with literature and were more sympathetic and less combative than his early productions. But his basic ideas and motives remained unchanged; they dominated his vast philosophical introduction to literary history and his studies in Hispanic Latin, Castilian, Catalan, Portuguese and Hispanic American literature.

The works of Menéndez y Pelayo are distinguished by profound erudition, aesthetic appreciation and clarity of presentation, although by reason of their vast scope they do not always come up to modern standards of scholarship. They are important principally because they served to revive Spanish intellectual history when it was at its lowest ebb. Many pupils and followers have continued Menéndez y Pelayo's

work. His reputation, no longer the subject of exaggerated adulation, has emerged from the obscurity in which it had been enshrouded, and his work forms one of the bases of the present national revival and serves to stimulate the movement for closer unity among the Iberian peoples as well as regionalism within the peninsula itself.

B. SÁNCHEZ ALONSO

Works: *Obras*, 22 vols. (Madrid 1883–1908); *Obras completas*, 13 vols. (Madrid 1911–24).

Consult: Artigas y Ferrando, Miguel, *Menéndez y Pelayo* (Santander 1927); Bonilla y San Martin, Adolfo, *La representación de Menéndez y Pelayo en la vida histórica nacional* (Madrid 1912), and *Marcelino Menéndez y Pelayo (1856–1912)*, Real Academia de la Historia, Boletín, extra number, May, 1914 (Madrid 1914); González Blanco, Andrès, *Marcelino Menéndez Pelayo (su vida y su obra)* (Madrid 1912); Bell, Aubrey F. G., *Contemporary Spanish Literature* (London 1925) p. 263–74; Warren, L. A., *Modern Spanish Literature*, 2 vols. (London 1929) vol. ii, p. 630–42.

MENGER, ANTON (1841–1906), Austrian jurist. Menger received his degree in law from the University of Vienna, where he became a professor of civil procedure. He is known for his works on the juridical theory of socialism, which he considered to be as important as the economic theory. While seeking its antecedents among the pre-Marxian socialists, he thought he was able to prove that Marx and Rodbertus borrowed essential elements of their systems from the so-called utopian thinkers, including the Saint-Simonians, Proudhon and William Thompson. He held that Marx lacked a legal critique of private property undermined by internal contradictions under a capitalist regime. Such a critique should complete his theory of surplus value and distinguish clearly between three different kinds of socialist rights upon which the possible juridical systems of socialism can be based, and which correspond to different economic organizations; namely, the right to the entire product of labor, the right to work and the right to exist. To the first corresponds collective ownership, the administration of production by workers' groups and the individual enjoyment of consumers' goods; to the right to exist corresponds nationalization of property, administration and consumption (communism). Menger's great merit lies in his having shown these two concepts of socialist rights to be irreducible antinomies and that it has been a fundamental defect of the socialist systems not to have clearly opposed them. He thus anticipated post-war socialist theory, which recognizes the inevitable conflict under any regime between producers and consumers and which has attempted to solve it by establishing an equilibrium between their opposing rights and interests.

Menger took part in the discussion of the projected German Civil Code of 1896 and strongly influenced its definitive draft. In particular he pointed out that the civil procedure envisaged by the code was altogether unfavorable to the poor. For their interests demanded procedure free of charge and freedom for the judge to make decisions based on the situation and according to the dictates of his conscience without being bound by the letter of the law. Menger was thus a precursor of the "free law" movement, and in this respect his ideas have influenced the new Swiss code. He was moreover one of the first to emphasize that the disciplinary power of a large scale employer over his workers, whereby he imposes unilaterally both shop regulations and fines, is illegitimate, for one of the parties to the labor contract thus becomes judge of his own cause. He concluded that not shop committees but direct intervention by the state was necessary to combat the arbitrariness of the employer.

This rigorous étatist tendency was accentuated particularly in his *Neue Staatslehre* (Jena 1903, 3rd ed. 1906); Menger's socialism is state socialism, which presumes a special reenforcement of the administrative power, threatening entirely to absorb the judicial and to become independent of the legislative power, while private law becomes entirely submerged in public law. Work is organized in a strictly hierarchical manner, the chiefs being appointed by the municipalities and the communes; the latter are themselves not autonomous organizations but organs of the central power. His absolute negation of democracy in the economic field is one of the most serious snags in Menger's system, which represents a sort of communist étatism emphasizing the rights of consumers against those of producers on the basis of a unilateral affirmation of the right to exist.

GEORGES GURVITCH

Works: *Das Recht auf den vollen Arbeitsertrag in geschichtlicher Darstellung* (Stuttgart 1886, 3rd ed. 1904), tr. by M. E. Tanner as *The Right to the Whole Produce of Labour* (London 1899); *Das bürgerliche Recht und die besitzlosen Volksklassen* (Tübingen 1890, 4th ed. 1908); *Über die sozialen Aufgaben der Rechtswissenschaft* (Vienna 1895, 2nd ed. 1905).

Consult: Grünberg, K., in *Zeitschrift für Volkswirtschaft, Sozialpolitik und Verwaltung*, vol. xviii (1909)

29–78, with bibliography of Menger's works; Andler, Charles, Introduction in French edition of *Neue Staatslehre*, tr. by E. Milhaud as *L'état socialiste* (Paris 1904) p. i–xlv; Kampffmeyer, Paul, "Vom Einfluss des Staates auf das Wirtschaftsleben" in *Sozialistische Monatshefte*, vol. vii (1903) 491–502.

MENGER, CARL (1840–1921), founder of the Austrian school of economics. Menger started his career in the Austrian civil service and was appointed professor of economics at the University of Vienna in 1873; in 1903 he withdrew from teaching to devote himself exclusively to scientific research. Like Jevons and Walras, who at approximately the same time independently advanced similar doctrines, Menger proceeds, in the explanation of economic phenomena, from the values which men place on goods because of their utility. This exceedingly obvious idea, which accords with the well known concept that sees in economics primarily an adaptation of means to ends, was pursued no further by the classical school because the latter was unable to differentiate between the utility of the total quantity of a commodity and that of a specific unit of a commodity. Through consistent application of the principle of marginal utility formulated by him Menger succeeded in explaining first the subjective value of consumers' goods, called by him goods of the first order, as they serve human purposes directly; then the value of productive goods, goods of higher order, which satisfy human needs indirectly. Herewith was created the foundation of a new theory of price and distribution, which Menger evolved in its basic characteristics and which has been built up by his successors, especially Böhm-Bawerk and Wieser. The methodological importance of this theory consists primarily in the fact that it endeavors to explain economic phenomena by "understanding" the behavior of the individual: demand and supply do not determine prices immediately but indirectly by determining in the first place subjective value. Further, this analogy between the formation of prices and of subjective value makes it possible to explain in the first approximation the basic features of distribution in every economic system, with the aid of the concept of social value, without having recourse to price theory. With regard to the question of method Menger in sharp controversy with the German historical school defended the concept later taken up by Windelband and Rickert that there are two distinct, equally legitimate kinds of research: theoretical and historical. The latter searches out the particular, the unique in phenomena; the former has the knowledge of the universal as its aim. Within theoretical research itself there are, according to Menger, two approaches: the exact and the empirico-realistic. The latter goes less far in abstraction in that it strives only after empirical, not universally valid laws.

Of Menger's other achievements his contribution to the doctrine of money is of importance. Money originated in the course of transition from direct to indirect exchange, with the most salable commodity assuming the role of the medium of exchange. He distinguished sharply between fluctuations of the value of money in general and those fluctuations which proceed from the money side, and emphasized the fact that the primary criterion for the size of money demand is not the velocity of circulation of money but the total amount of cash balances in the hands of financial institutions and individuals. That Menger's doctrines are known largely in the form in which they were expounded by other authors is explained by the fact that both of his chief works were soon out of print and by the fact that Menger arranged for no new editions.

FRANZ X. WEISS

Important works: *Grundsätze der Volkswirthschaftslehre* (Vienna 1871; 2nd ed. by Karl Menger, Jr., 1923); *Untersuchungen über die Methode der Socialwissenschaften, und der politischen Oekonomie insbesondere* (Leipsic 1883); *Die Irrthümer des Historismus in der deutschen Nationalökonomie* (Vienna 1884); "Zur Theorie des Kapitals," and "Grundzuge einer Klassifikation der Wirtschaftswissenschaften" in *Jahrbücher für Nationalökonomie und Statistik*, n.s., vol. xvii (1888) 1–49, and n.s., vol. xix (1889) 465–96; "Geld" in *Handwörterbuch der Staatswissenschaften*, vol. iv (3rd ed. Jena 1909) p. 555–610; "On the Origin of Money," tr. by C. A. Foley in *Economic Journal*, vol. ii (1892) 239–55.

Consult: Schumpeter, J., in *Zeitschrift für Volkswirtschaft und Sozialpolitik*, n.s., vol. i (1921) 197–206; Wieser, Friedrich, in *Neue österreichische Biographie*, vol. i (Vienna 1923) p. 84–92; Zuckerkandl, Robert, in *Deutsches biographisches Jahrbuch*, vol. iii (Berlin 1927) p. 192–200; Weiss, F. X., "Zur zweiten Auflage von Carl Mengers 'Grundsätzen' " in *Zeitschrift für Volkswirtschaft und Sozialpolitik*, n.s., vol. iv (1924) 134–54; Engländer, Oskar, "Karl Mengers Grundsätze der Volkswirtschaftslehre" in *Schmollers Jahrbuch*, vol. li, pt. i (Munich 1927) p. 371–401; Schmoller, Gustav, *Zur Litteraturgeschichte der Staats- und Sozialwissenschaften* (Leipsic 1888) p. 275–94.

MENNONITES. *See* SECTS.

MENSHEVIKS. *See* RUSSIAN REVOLUTION; BOLSHEVISM.

MENTAL DEFECTIVES is a term applied generally to individuals who are unable to maintain themselves in society because their mental development is so retarded that they must be isolated from the rest of the community or kept under special forms of supervision. As intellectual retardation varies quantitatively, the higher the requirements for social maintenance, the larger the number of mental defectives.

In the early nineteenth century in the United States custodial care of a very inadequate sort was provided in insane asylums, almshouses and rarely in special institutions, for only the lowest degrees of mental deficiency—according to present classification, idiocy and low grade imbecility. Idiocy was not clearly differentiated from mania until 1828 by Esquirol. Meanwhile, largely through the influence of experiments by Itard in the education of a boy found roaming in the woods of Aveyron devoid of articulate speech and human habits (*De l'éducation d'un homme sauvage . . . de l'Aveyron*, Paris 1801; tr. by G. and M. Humphrey as *The Wild Boy of Aveyron*, New York 1932), organized efforts were undertaken to overcome congenital defects of the mind through education. In spite of the discouraging results obtained by Itard his method of sensory and motor training, which consisted of ingenious graduated exercises for the development of perception and coordination, was developed to a high degree by his pupil Seguin and in the teaching of both mental defectives and normal children by Maria Montessori. Seguin's influence on the training of mental defectives and especially on the development of institutions and educational facilities for their care was very profound. While there were but two institutions for the feebleminded in Massachusetts prior to his arrival in the United States in 1850, by 1865 schools were established in New York, Pennsylvania, Ohio, Connecticut, Kentucky and Illinois largely through his inspiration. On the other hand, the extravagant hopes which he aroused that the problem of mental deficiency would be solved by formal education were not realized, and institutions equipped with apparatus for teaching according to his "physiological method" gradually sank to regular custodial standards. Through the impetus of his efforts, however, facilities for the care of mental defectives were improved.

Mental defectives were regarded in Seguin's time merely as handicapped members of society who required special educational treatment, and the chief social aspect of the problem was that of their dependency. It was not until the development of quantitative mental tests by Binet that mental defectives came to be regarded as a great menace to the welfare of society. The tests made it possible to express retardation in terms of mental years and thus to distinguish more clearly the milder cases of mental deficiency, classified in the United States as morons, or high grade defectives. Since high grade defectives, persons scoring a mental age of from seven to twelve years in the Binet-Simon scale, represent in the aggregate about three times the number of low grade defectives, the problem of mental deficiency came to assume vast proportions. Goddard, one of the first to use the Binet-Simon tests in the United States, examined the inmates of a juvenile detention home and found among them a very large number of mentally retarded persons. Other limited researches with the tests led him to contend that problems of "the criminal, the pauper and the intemperate" could be attributed largely to mental deficiency. Goddard also made genealogic studies of the feebleminded and concluded that mental deficiency was a unit character inherited in accordance with the Mendelian laws. Under his influence interest in the problem of mental deficiency was heightened and intelligence tests came to be regarded as the key to the solution of the problems of crime and pauperism. Enthusiasts, who assumed that most criminals, vagabonds, prostitutes and paupers were mentally deficient and that their deficiency was inherited, urged that the solution of the problem lay in rooting mental defectives out of human stock. This they hoped to accomplish through state surveys, registration, isolation and sterilization; the problem of the mental defective appeared to them to be largely one of eugenics.

Later wide use of the tests, control studies of various delinquent groups and the examination through group intelligence tests of nearly two million recruits in the World War revealed that these bold conclusions were unwarranted. The intelligence of penitentiary groups as measured by tests was found to be similar in distribution to that of the general population. Furthermore if a mental age of twelve years be accepted as the border line of mental deficiency, according to the results of the army test over 30 percent of the population would be included; and if a mental age of nine and a half years be adopted, at least 7 percent of the white population would be included. Except for the more severe cases of mental deficiency diagnosis on the basis of educational or test criteria carries no certainty as to

social adaptability. The feebleminded, who are so diagnosed on the basis of intellectual retardation plus failure to adapt themselves socially, that is, failure to earn a livelihood and to remain non-delinquent, represent a small fraction of that very large group of intellectually retarded who by virtue of favorable environment and good fortune or both are able to maintain themselves in society. The number of feebleminded in the institutions of states with the best facilities for their care represent less than one in two hundred and fifty of the population; even if the resources of the state were multiplied by ten, only a small portion of the intellectually retarded as determined by the criteria of mental age could be accommodated. Of the feebleminded who are now institutionalized a fair proportion can be socially reclaimed even to self-maintenance in the community, as the work of Fernald and Bernstein has shown.

The cause of institutionalization of mental defectives is usually dependency or actual or potential criminality. When a mental defective is adequately cared for by his family, the state prefers to permit him to remain at home to save the expense of institutional costs. The family, on the other hand, may reject institutional placement even when this is urged by school or state authorities. The state if insistent must then legally prove the existence of neglect by parents with regard to supervision and care or of delinquency as defined by law. The problem of coercing families to surrender mental defectives to the care of the state is relatively unimportant in comparison with the problem of caring for defectives willingly thrust upon it. Agencies concerned with admission of defectives to state institutions usually have long waiting lists and political pressure is sometimes used to favor the acceptance of a defective out of turn. Discrimination is necessary and important in the selection of urgent cases requiring institutional placement. Once the diagnosis of mental deficiency is made and institutional care is an accepted recommendation, the severest cases in terms of immediate difficulty for the social group receive first consideration. A general and convenient rule is to judge a given case on the basis of degree of delinquency, dependency and deficiency. A delinquent imbecile, for example, is chosen in preference to an imbecile who is dependent although non-delinquent; a dependent idiot would be selected prior to a dependent imbecile, a seriously delinquent moron prior to a mildly delinquent one.

Programs advocated by the eugenists with a view to raising the mental level of the entire population by sterilizing or isolating those who fall below an artificially selected intellectual standard have been found to be neither practical nor scientific (*see* EUGENICS). Sterilization of the mentally defective is limited to such cases as those in which by careful individual study there appears a reasonable certainty that the potential issue will be charges of the state. There are in institutions a number of feebleminded who are capable of supporting themselves in the community but who are retained by superintendents because of known sexual proclivities. When sterilization is employed in these and other special cases it does not imply adoption of a eugenic program but must be regarded as a practical manoeuvre occasioned by limited facilities for handling the problem in institutions or colonies or through extramural care.

DAVID M. LEVY

See: MENTAL DISORDERS; MENTAL TESTS; PSYCHOLOGY; ABNORMAL PSYCHOLOGY; PSYCHIATRY; ALIENIST; MENTAL HYGIENE; EUGENICS; CRIMINOLOGY; PUBLIC HEALTH; HEREDITY; ENVIRONMENTALISM.

Consult: Davies, S. P., *Social Control of the Mentally Deficient* (new enlarged ed. New York 1930); Goddard, H. H., *Feeble-mindedness; Its Causes and Consequences* (New York 1914); Miner, J. B., *Deficiency and Delinquency; an Interpretation of Mental Testing* (Baltimore 1918); "Psychological Examining in the United States Army," ed. by R. M. Yerkes, National Academy of Sciences, *Memoirs*, vol. xv (Washington 1921); Great Britain, Mental Deficiency Committee, *Report*, 3 vols. (1929); Fernald, W. E., "A State Program for the Care of the Mentally Defective," Bernstein, Charles, "Colony and Extra-institutional Care for the Feebleminded," and Matthews, M. A., "One Hundred Institutionally Trained Male Defectives in the Community under Supervision" in *Mental Hygiene*, vol. iii (1919) 566-74, vol. iv (1920) 1-28, and vol. vi (1922) 332-42; Town, Clara H., and Hill, G. E., *How the Feebleminded Live in the Community* (Buffalo n.d.); Sherlock, E. B., *Minds in Arrear* (London 1932); Jennings, H. S., *Biological Basis of Human Nature* (New York 1930); Hogben, L., *Genetic Principles in Medicine and Social Science* (London 1931) ch. iv.

MENTAL DISEASE. *See* MENTAL DISORDERS.

MENTAL DISORDERS, or diseases, are always defined by reference to an explicit or implicit formulation of personality which sets limits to the manifestations of human individuality. That which deviates from the norm thus created is regarded as aberrant and is considered genius or crime or mental disorder, depending upon a large number of secondary definitions

which fix the individual's relations with the group.

Prenaturalistic views of human personality consider mental disorders as the results of manipulations of the victim by transcendental agencies, as, for example, in the case of belief in demoniacal possession. Naturalistic interpretations may be classified into naïve mechanistic doctrines, such as those which regard mental disorders as the results of medical diseases and attribute them to lesions in the nervous system, the endocrine glands or in other organs of the body; and the more sophisticated biological doctrines, according to which mental disorders are more or less rigidly determined by the individual's genetic constitution or his environment or by a combination of both. Most psychological theories of mental disorder belong in these categories, for example, that of conditioned response behaviorism, the psychoanalytic doctrine of libido fixation and other dynamic explanations. Finally, anthropology views mental disorders as the result of unduly complicated interpersonal integrations arising from innately conditioned but culturally directed tendency systems.

The mystical and magical approach to mental disorder survives in folk belief; it casts a shadow of awe and fear upon patients called insane, keeps many persons from approaching the confines of psychiatric hospitals and greatly interferes with public enlightenment as to the nature of mental disorders. This attitude is fostered by clergymen and others who undertake the healing of mental patients, when not frankly by exorcism, at least by magical appeals to better nature and to will power. The medical approach predominates in modern psychiatry and has produced a considerable literature, much of which is controversial as to classifications, pathologies and therapeutic measures. The medical ideal is to discover the disease entity, with its specific cause, course and outcome. This method was followed in the case of dementia paralytica, a neurosyphilitic disease first clearly defined by Bayle in 1822. Kraepelin, who was greatly influenced by the medical ideal, in 1896 diagnosed approximately 28 percent of his cases as dementia paralytica. After the adoption of Wassermann's serological technique for detecting syphilis he diagnosed as dementia paralytica only about 9 percent of his cases.

Destructive changes in the central nervous system are an invariable concomitant of dementia paralytica. This is not the case, however, with the functional mental disorders which are not associated with known changes in the body. A considerable variety of major functional mental disorders had been recognized before 1886. Kraepelin reduced these to three: dementia praecox, manic depressive psychosis and a group which in 1893 he differentiated into paranoia and paraphrenia. In 1901 over 50 percent of the cases admitted to his clinic at Heidelberg were diagnosed as dementia praecox. Ten years later fewer than 20 percent of his cases were so diagnosed, indicating that this symptomatic prognostic classification was not completely successful even when applied by its creator. It has nevertheless had wide influence and has been adopted with but slight modification by most hospitals in the United States and Canada. A study made by the author of the diagnostic distribution of the patient population in sixty hospitals treating mental disorders shows that in 1929 slightly under 62 percent of 124,028 patients were classified according to the rubrics of the functional psychoses. The ratio of the total number of paranoid and dementia praecox cases to the total number of cases of manic depressive psychoses is 3.75 to 1; the ratios in different hospitals vary, however, from 49 to 1 to 1 to 2.5, and the percentage of the functional disorders varies from 48 to 98 percent of the total number of patients. As there are no determining factors which may explain these wide discrepancies other than the personal equations of psychiatrists, it must be concluded that the symptomatic prognostic classification does not yield results which can be utilized statistically.

Medical treatment of mental disorders has been extremely varied. Hydrotherapeutic, occupational therapeutic, pharmacological, organotherapeutic and recreational methods have vied with surgical operations ranging from modified eviscerations to injections of sundry substances into the body. Elevations of temperature some degrees above that of the healthy body are more promptly fatal to the germ of syphilis than to the human tissues; this form of therapy has been useful therefore in the case of patients suffering from dementia paralytica. Enthusiasts are now extending its use to other mental disorders. Patients formerly chained in dungeons and flogged; not long since exsanguinated and purged; recently drugged, isolated and restrained; still more recently treated for teeth and tonsil infections or given spinal injections of horse serum, may now receive treatment by infection with malaria or have their bodily temperature raised by electrical induction.

The psychiatric hypothesis which holds that most or all mental disorders are ordained in the germ plasm has been applied to functional disorders by von Verschuer, who found that thirty-one of thirty-four identical twins and only three out of eight fraternal twins suffered from dementia praecox, or schizophrenia; his data are equally impressive in the case of the manic depressive psychosis. Since the hereditary equipment of identical twins may be presumed to be the same, any differentiation must be the result of environmental factors. For this reason studies of identical twins are relevant, while other studies of human heredity are of limited applicability to the problem of mental disorder. A hereditary neuropathic or psychopathic taint has often been held to be important as the determining factor in mental disorders; the comparative frequency of this taint in relatives of the non-psychotic and the psychotic has been calculated to be approximately 70 to 77, while the frequency of severe mental disorder in a parent of a non-psychotic person and in a parent of a psychotic person seems to be approximately 1 to 6. The influence of psychotic parents may, however, operate through their functioning as part of the early environment of the child rather than through heredity. The psychiatric practises which arise from the heredity doctrines are chiefly preventive—eugenic reform, segregation and sterilization (*see* EUGENICS).

Environmental influence has been stressed particularly in the works of Freud, Jung and Adolf Meyer and also in the attempts to explain mental disorders on the basis of the conditioned reflexology of Pavlov. Freud came to regard mental processes as essentially unconscious, to consider conscious mental processes merely as isolated acts although parts of the whole psychic entity and to contend that sexual impulses play an insufficiently appreciated role in the causation of nervous and mental disorders and of normal behavior. He conceptualized a force in the mind which functions as a censor, and which excludes from consciousness and from any recognized influence upon action all tendencies which are uncongenial to it. The force of repression falls especially upon the sexual instincts, the frustration of which may lead to the development of neurosis, psychosis or crime. This frustration generally involves a regression to points of libido fixation established in earlier life. Whether the conflict between the censor and instinct finds a healthy solution or leads to a neurotic inhibition of function depends upon the relative strength of the forces concerned. The first important conflict in the course of personality growth is the Oedipus complex, which arises in the child's relation to his parents; those destined to succumb to mental disorder fail habitually in their attempt to grapple with this problem. If the patient can effect a transference to the physician, it is generally possible to assist him by the method of free association and through the interpretation of dreams to overcome internal resistances and to do away with repressions, so that he may replace unconscious by conscious mental acts. In 1907 Jung amplified Freud's results in his report upon three years of psychoanalytically oriented experimental work and clinical observation on dementia praecox patients. He contended that dissociated complexes explained much that was meaningless and bizarre in the speech and behavior of such patients. In the United States Smith Ely Jelliffe and William Allanson White identified themselves with this type of psychogenetic explanation, and it is chiefly through their influence that a rigid medical formalism has been avoided in American psychiatry.

Adolf Meyer as early as 1906 interpreted mental disorders as inadequate habits of dealing with the difficulties of life. In 1908 he defined mind as a "sufficiently organized living being in action and not a peculiar form of mind stuff" and emphasized the important fact that "mental activity is really best understood in its full meaning as the adaptation and adjustment of the individual as a whole, in contrast to the simple activity of single organs." He has devised a nomenclature for psychiatry which is the nearest approach to a basis for reliable statistics that has yet appeared. Adopting *ergasia* as the best term for performance and behavior and psychobiologically integrated activity in general, including mentation, he has derived from it the following classification of reaction types: the anergastic disorders, or organic deficits as acquired defect reactions or dementias; the dysergastic or support disorders, represented by the deliria and hallucination disorders of infection, poison and malnutrition; the parergastic and paranoic reactions, which are diffuse and general as in the schizophrenic, or circumscribed and systematized as in paranoia or in the paranoic, or paranoid, types; the thymergastic or affective reactions of excessive speeding up or of depression and slowing, without essential distortion; the merergastic or minor psychosis, with neurasthenic, anxiety, obsession, submersion and epi-

leptic groups of reactions; and the oligergastic states of defective development represented by idiocy, imbecility and moron types.

Psychiatric theory has more recently been reoriented on the basis of an appreciation of the fact that the human organism is made up not only of parts of the physicochemical world but also of accessions acquired from the universe of culture. This approach recognizes that the person, psychobiologically conceived, maintains organization, communal existence and functional activity in and within both the physicochemical and the superorganic cultural universe. The study of the life course of the individual becomes more intelligible when personality is conceived as the hypothetical entity which manifests itself in interpersonal relations, the latter including interactions with other people, real or fancied, primarily or mediately integrated into dynamic complexes; and with traditions, customs, inventions and institutions produced by man. These interactions indicate that in a somewhat homogeneous culture complex there is a rather consistent course of growth of personality. Along with the elaboration of physicochemical factors, there is a progressive elaboration and differentiation of motives. These integrating tendencies are acquired from a steadily expanding series of culture surrogates, such as the mother, the family group, teachers, companions, chums, friends, love objects, enemies, employers and colleagues. The motives manifest themselves in the integration of total situations or systems involving two or more people, real or fancied, and a variety of cultural elements. Within these motives are demands for certain activities, sometimes consciously formulated in terms of a goal, at other times devoid of any conscious formulation, in which case the activity is unnoted by the participants. Frequently the formulation is imperfect and is expressed in accidental, meaningless or mistaken activity or rationalized in plausible abstractions from common experience without much regard to the possibility of consensual validation. When the activity demanded by the system has been consummated, the motivation is replaced by another. Not infrequently, however, the activity is complicated by conflicting motives and their attendant processes of system integration; in such cases maladjustive or non-adjustive processes are observed.

The activities both of integrating and of resolving interpersonal situations as well as of dealing with the non-personified world may be envisaged as manifestations of a biological organism possessing instrumental receptor and effector organs, which constitute its zones of interaction with the environment. The characteristics of these zones are fixed primarily by the constitution which the particular organism has developed through heredity and nutrition. If the individual at birth is endowed with little possibility of growth of the higher nervous system, or if early injury arrests its growth or if there is some chemical deficiency in the food which delays or enfeebles the organization and functional activity of these tissues, what is commonly called mental deficiency results. A great part of the cultural heritage which would otherwise be available then remains irrelevant; it cannot be assimilated into the personality, which is correspondingly limited in its capacity for integration with people and with the materials of civilization. If the individual from birth through infancy and childhood is subjected by the mother and the family group to highly inconsistent inhibitory and facilitating experience (if the family group is psychotic or if the child is generally unwelcome), the individual is likely to show increasing deviation from consistent growth through adolescence. Unless he is extraordinarily fortunate in his school situation, it is probable that his deviation will be so great that he will not develop the tendencies characteristic of pre-adolescent and adolescent individuals, so that he will be what is commonly designated as a psychopathic personality, a nuisance within the social fabric, incapable of accommodation and cooperation and unequal to the task of restraining himself from immediate satisfactions. Thus while the mentally deficient are fundamentally handicapped by constitutional factors, psychopathic personalities are the products of experience; both are relatively incompetent in their relations with other people.

The symptomatic acts which are expressions of the mentally disordered are therefore most meaningful for psychiatry when their interpersonal contexts are known. They are otherwise psychological, physiological or biophysical aspects of human processes, unilluminating in reference to the personality chiefly concerned. Formulations in terms of mental mechanisms, neurological and endocrinological entities, reflex arcs and somatic tension sets are too general and too partial to aid in the understanding of mental health or its absence. They apply in cases of crippled personalities suffering from dementia paralytica, which, since it is characterized by a

specific chain of symptomatic events, can be diagnosed with a high degree of probability. But even the interpersonal activity of the patient in the early stages of this malady is explicable only when referred to his personal history. Psychiatric consideration of dementia paralytica becomes a matter chiefly for physiology only after the disease process has destroyed the tissues associated with human as contrasted with infrahuman behavior.

Almost all of the milder maladjustments which are evidenced in personal, domestic and occupational inefficiencies of various types, some seemingly because of physical illness, others clearly mental and still others a combination of the two, arise from warp encountered in earlier stages of personality growth, often in turn the effect of mild mental disorder in one or more of the family group. Once established, some maladjustments are very difficult to remedy; among them, for example, is the obsessional state, in which morbid doubts, scruples, fears or preoccupation with ritualistic activities and systems of thought are substituted for direct interpersonal adjustment, to the great detriment of useful living and to the extreme inconvenience of those who are in contact with the patient. The obsessed person may be described as one who has come to utilize gestures and words, cultural entities, in an unduly complex and individualistic fashion. The performances of the person who must continually clear his throat, emit grunts or activate various expressive neuromuscular units in lieu of aggressively compelling the submission of others, or of the sexually deviated male who must parody feminine behavior in order to stimulate and frustrate the equivalent motivations in other men he encounters are comparable to compulsions to step on certain cracks in the pavement or to obfuscate every issue with superficially irrelevant or incomprehensible theorizations. The obsessional states probably surpass in their vicious cultural consequences the more immediately grave paranoid states, wherein motivations which conflict with early inhibitory training are projected by morbid sensitivity, suspicion and delusions of persecution, to such effect that all blame is transferred out of the self-consciousness, which is correspondingly exalted and regarded as grandiosely good.

Besides the chronic fatigue and irritability of the neurasthenic and the compromises of the hysteric, these merergastic disorders include the milder grades of hypochondriasis, which is often a parergastic disorder, and the anxiety states. Anxiety, in the psychiatric sense, is morbid fear, a symptom experienced from irrational threats to the personality. While it is an important factor in the development of many, if not all, mental disorders, it makes up the symptomatology of one of them. In the anxiety states, the sufferer undergoes obscurely motivated attacks of fear; the symptoms may be attacks of palpitation, perspiration, trembling, intestinal disturbance or indigestion. If the disorder is severe and the attacks recur frequently, or more or less continuously, there may appear physical disorders which are often regarded as medical diseases.

The disastrous social consequences of mental disorders are of inestimable significance. The victims of parergastic (schizophrenic, dementia praecox) disorders alone filled in 1930 more than one half of the 438,000 hospital beds in the United States and comprise one fifth of the annual admittances; 70 percent are between twenty and forty years old when they enter the hospital, where many of them remain under care until they die. The per capita incidence of parergastic disorders in the United States does not appear to differ as between Negroes and whites; they are found among immigrant as well as native white and Mongoloid stock. Statistics are available as to the frequency of these disorders only in European-American countries; the data in the following table, compiled from reports of the International Health Organization of the League of Nations and from other sources, give some suggestion as to the numerical magnitude of the problem.

The proportion of hospital patients suffering from the gravest disorders varies not only from country to country but in different sections of the same state. In general it is higher in urban than in rural communities, and in wealthier than in poorer sections. There is no basis for an accurate estimate of the number of people partially disabled by milder disorders, but there is every reason to believe that in Europe and the United States there are many more such victims than are receiving institutional care.

The treatment that has been developed from environmentalistic and from psychobiological psychiatry comprises immediate and mediate procedures. The former are based on direct contact with the psychiatrist, as in the case of the psychoanalytic, psychocathartic and psychosynthetic techniques, the latter on the utilization of psychiatrically supervised personal environ-

INSTITUTIONS FOR THE MENTALLY DISORDERED IN TWENTY-SIX COUNTRIES

COUNTRY	YEAR	INSTITUTIONS	ADMISSION	PATIENTS REMAINING AT END OF YEAR
Australia	1929	38	3,471	22,198
Austria	1929	9	8,070	11,504
Belgium	1927	51	—	20,205*
Canada	1930	42	—	26,862
Czechoslovakia	1929	15	9,013	12,047*
Egypt	1929	2	1,651	2,143*
England and Wales	1929	167	21,741	121,208*
Estonia	1928	5	1,758	1,048
Finland	1928	37	3,837	5,290*
Germany	1928	407	—	162,783*
Greece	1929	9	1,351	1,914*
Hungary	1929	6	2,417	2,053*
Italy	1929	147	23,595	64,503
Japan	1929	19	3,420	3,122
Latvia	1929	7	1,533	2,364*
Mexico	1929	4	1,894	1,919*
Netherlands	1929	38	—	21,000*
Norway	1928	23	1,767	5,368*
Poland	1929	23	—	10,575*
Rumania	1929	11	5,262	4,710
Sweden	1929	74	4,693	15,678*
Switzerland	1929	34	—	11,064
Turkey	1929	3	2,184	1,125*
Union of South Africa	1930	11	2,577	10,856
U. S. S. R.	1927	98	—	26,938
United States	1930	561	—	437,919*

* Total beds available; in general, percentage of vacant beds is small.

Source: Compiled chiefly from League of Nations, International Health Organization, *International Health Yearbook, 1930*, 1932.III.2 (Geneva 1932).

ments. The immediate methods are often unavailable to the sufferer largely because of the time required and expense entailed; while, except in child guidance work and some work with delinquents, such as that by Aichorn, the mediate techniques are in the stage of empirical application or scientific exploration. A significant experiment in this direction has been reported from one of the endowed hospitals. Acutely parergastic patients who had undergone rapid development of the psychosis were placed in a situation in which they were encouraged to renew efforts at adjustment with others and in which they were as little discouraged and rebuffed as was consistent with their bodily safety. Besides each other, they encountered only a trained personnel consciously integrated toward encouraging security in interpersonal relations. There are no reliable statistics as to the proportion of parergastic patients whose disorder was originally acute, but it is probably increasing and is perhaps now about one in three. Inasmuch as these disorders often appear in persons from fifteen to twenty-five years of age and fully as often among superior individuals as among those of inferior intelligence and ability, and since the recovery rate of those promptly hospitalized under ordinarily good care is probably less than 30 percent, this experimental achievement—80 percent social recovery—indicates tentatively that this method of treatment is efficacious. Social recovery here means, however, merely that the patient has regained the capacity to conduct his life without supervision; it does not mean that the underlying warp leading to the psychosis has been remedied completely but implies some degree of increased adaptability and is a prerequisite to more fundamental treatment. Some psychiatrists hold that by definition dementia praecox patients cannot recover; moreover another study in the same hospital suggests that parergastic phenomena of insidious rather than of acute onset are more serious. It is not therefore to be understood that a uniform high rate of improvement can be anticipated from the application of this sort of treatment to all parergastic patients, even if instituted early.

The mediate, socio-psychiatric approach to the gravest disorders of adolescence employed in the experiment described above is the formulated application of long established therapeutic factors. Thus many adolescents are now saved from serious upheavals by the socializing influences of supervised recreational and educational activities, such as those encountered in summer camps. A new type of therapy based on socialization programs within and outside of institutions should reduce the destruction of personality by parergastic disorders to a small part of the current figure and should go far toward alleviating the present burden of minor maladjustments.

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See: MENTAL HYGIENE; MENTAL DEFECTIVES; PSYCHIATRY; PSYCHOANALYSIS; PSYCHOLOGY; ABNORMAL PSYCHOLOGY; PERSONALITY; MENTAL TESTS; INSTITUTIONS, PUBLIC; EUGENICS; HEREDITY; INSANITY.

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MENTAL HYGIENE. Although the ancient Greeks anticipated in some respects the principles of modern psychiatric therapy, deliberate concern with a hygiene of the mind dates only from the end of the nineteenth century. For about a century before, the major efforts in the field of mental medicine had been directed toward the elimination of the more intolerable and inhumane features of the treatment afforded those afflicted with mental disorders. Mentally diseased persons had been indiscriminately incarcerated in filthy jails and correctional institutions with criminals and diseased persons; they had been chained, confined by straight jackets, drugged into stupor and flogged. When in 1792 in the midst of the French Revolution Philippe Pinel began his agitation for a more humane treatment of the insane he did so in the face of tremendous opposition not only from the public at large but also from his colleagues in the medical profession. He initiated the reforms by releasing the insane from their chains and by placing them in hospitals. Reforms comparable with those of Pinel were championed in the United States half a century later by Dorothea Dix, who was instrumental in founding no fewer than thirty-two institutions for the care of the insane. Although the New York Hospital had furnished hospital treatment for persons suffering from mental disorders from the day of its opening in 1791, the establishment in 1821 of Bloomingdale Hospital, now the psychiatric division of the former, "for the purpose of ascertaining to what extent the recovery of patients

might be accomplished by moral as well as by purely medical treatment" was a distinct advance in the humane and intelligent care of such patients.

The publication of the studies of hysteria by Breuer and Freud in 1893 (in *Neurologisches Zentralblatt*, vol. ii; tr. in Freud's *Collected Papers*, vol. i, New York 1924, p. 24–41) marked the beginning of a new movement in psychology and psychotherapy which has proved as epoch making in the treatment of the mentally afflicted as Pinel's pioneer endeavors. Psychiatry shared also in the benefits of the general enrichment of the stock of dependable knowledge developed by the scientific research of the nineteenth century in the fields of pathology, bacteriology, chemistry, pharmaco-dynamics, endocrinology and sociology. The problems of mental disease came to be attacked with the same instruments of scientific research as other forms of disease. Heredity, injuries to the nervous system, infection and toxemias of various origins were found to be directly responsible for some forms of mental disorder. Accordingly it became possible to speak with some degree of accuracy of a hygiene of the mind, at least as related to these organically, physically and chemically conditioned mental disorders. Syphilis, alcohol, head injury and the natural changes in the constitution and functioning of the brain which go with advanced age were found to be responsible for the afflictions of at least a third of the inmates of hospitals for the insane. The preventive efforts which the discovery of these specific causes of mental disorder made possible gave rise to the idea of mental hygiene.

The mental hygiene movement (the term was suggested by Adolf Meyer) had its inception in 1908 with the publication of Clifford Whittingham Beers' *A Mind That Found Itself* (rev. ed. New York 1923), a vivid record of the author's experiences as a patient in private and public hospitals for the mentally ill and an eloquent plea for reform and education in the consideration and treatment of the problems of mental diseases. Several months after the publication of his book Beers organized the pioneer Connecticut Society for Mental Hygiene designed to dissipate the prevailing ignorance of the causes of mental diseases. The National Committee for Mental Hygiene was organized during the next year, and by 1929 there were nineteen state mental hygiene societies in the United States and sixteen national societies throughout the world. The International Congress for Mental Hygiene organized in 1922 held the first International Mental Hygiene Congress in Washington in 1930. The American Foundation for Mental Hygiene was organized in 1928 as a financing agency. The mental hygiene movement has expanded its original objectives to include not only the development of therapeutic procedures to forestall individual maladjustments and of effective treatment and control of the mentally diseased and defective but also the promotion of general social welfare measures, especially in the field of health.

The importance of the problems in the field of mental hygiene is indicated by a glance at the prevalence of mental diseases in the United States. The 1928 hospital census of the American Medical Association showed that one out of every 325 persons in the United States was a patient in an institution for nervous and mental disorders, including patients in institutions for the feebleminded and the epileptic. There were about 438,000 patients in hospitals for mental diseases in the United States in 1928, maintained at a cost of over $80,000,000 a year; the hospital population is increasing at the annual rate of approximately 10,000 and about 75,000 new cases are admitted to institutions every year. According to a recent study of mental disease expectancy, in New York state approximately one person out of every twenty-two of the population becomes a patient in a mental hospital at some time during his lifetime. There are more patients in mental hospitals than in all of the general hospitals of the country at any one time, and most mental hospitals are at all times so overcrowded that many new cases are denied admission. As much as one eighth of the total expenditure of some states is for the care of the insane; the burden is always increasing, since as yet under the most favorable circumstances treatment results in not more than 25 to 30 percent of recoveries. Prevention, the objective of the mental hygiene movement, is therefore the only effective way of reducing this burden. Feeblemindedness also has become a major mental hygiene problem in that it leads directly or indirectly to dependency, delinquency, crime and other social problems; only about 50,000 of the approximately 500,000 feebleminded in the United States are cared for in proper institutions. Furthermore approximately 400,000 young children in the schools of the United States are so handicapped intellectually and emotionally as to find it extremely difficult or impossible to keep up with the required school tasks and are therefore exposed to maladjustments of various

degrees of severity. The discovery and proper adjustment of these children are now among the most important tasks of the mental hygiene movement. The sponsors of the movement also point to the need for such work to lessen the number of suicides, a large proportion of which can be traced to mental disorders of a preventable type. They also include within the scope of their work the psychiatric treatment of inmates of reformatories and prisons under the hypothesis that the majority of the chronically criminal suffer from some type of mental pathology. They have also been active in vocational and industrial fields, seeking to adjust workers to their jobs.

To discover the actual state of affairs regarding the care and treatment of the mentally handicapped in various communities the National Committee for Mental Hygiene under the direction of Thomas W. Salmon undertook careful surveys of state and county institutions for mental diseases, reformatories and prisons and made a series of clinical studies. The surveys, which were eventually carried out in some thirty states and ten of which had been published by 1927, aroused wide popular interest and were followed in some states by appropriate legislation for the improvement of the lot of the mentally handicapped as regards both more adequate provision for care and improved scientific medical facilities for the study and treatment of individual cases. Of particular significance from a preventive point of view was the promotion of the idea of out-patient and after care activities in connection with the institutions for the mentally handicapped and the encouragement of a closer rapport between the institution and the medical profession of the community. As a result the widespread belief that the mentally ill were beyond all aid has been modified and more patients are coming in contact with the therapeutic facilities at an earlier stage of their maladjustment. The woeful lack of any dependable statistics as revealed by the surveys led to the establishment by the National Committee for Mental Hygiene of a Division on Statistics and Information, which in cooperation with the American Psychiatric Association evolved a uniform system of statistics and classification of diseases for hospitals for the insane, epileptic and feebleminded; this system has been adopted for annual reports by many institutions and by the federal Census Bureau. In 1928 at the request of the American Public Health Association the National Committee for Mental Hygiene formulated a set of tentative standards in mental hygiene and drew up a tentative schedule to facilitate the work of state or city officials in planning practical and economical mental hygiene programs. The National Committee also distributes thousands of educational pamphlets and leaflets and has since 1917 published *Mental Hygiene*, a quarterly semiscientific magazine, which has served as the organ of the mental hygiene movement and disseminated its aims among the intelligent laity. It has sponsored lectures before professional, semiprofessional and lay audiences, and through its efforts courses in mental hygiene have been added to the curricula of colleges and schools for the training of social workers and teachers. The profession of the psychiatric social worker came into being largely as the need for his services was revealed by the mental hygiene movement. Since 1928 efforts have been made to improve the teaching of psychiatry in medical schools and clinics, and funds have been gathered for the provision of scholarships in psychiatry for young medical graduates. Accumulated studies of the careers of maladjusted men and women substantiated the opinion long held by students of human conduct in health and disease that the roots of these maladjustments lay in childhood experiences. For this reason the Bureau of Children's Guidance was established under the direction of the New York School for Social Work in 1921 with the financial assistance of the Commonwealth Fund, and child guidance clinics were later founded in many communities in the United States and other countries. In 1928 approximately 40,000 children were served by these clinics in the United States.

In spite of the growth of this movement and its permeation of most fields of human endeavor no adequate audit has as yet been made of the effect of its activities upon human relations. Much has been accomplished in the direction of the original limited objective of improving the lot of the insane; treatment and care have progressed greatly, especially in New York, Massachusetts and Illinois, where institutions for the insane have been transformed into modern hospitals approximating the best standards of the practise of medicine. Progress in the clinical understanding and treatment of the mental patient through the development of psychiatry has contributed a great deal toward shaping the attitude of the community toward its insane and is responsible to a large extent for the present more enlightened procedure. The humanization of the care of the mentally ill may also be attributed in

part to the general march of human progress, although mediaeval attitudes and irrational tabus toward many of the phases and problems of human relations are still prevalent. The active building of prisons, jails, penitentiaries and poorhouses continues and the lives and personalities of countless numbers of children are still being mangled and distorted by improper guidance. Moreover the success of the mental hygiene movement has been limited by the framework of the society within which it works—an economic system which engenders personal crises, maladjustments and frustrations by failing to provide for the masses of the people adequate certainty of employment and sufficient material income. Critics of the mental hygiene movement have contended that in stressing individual adjustment to existing society and in emphasizing the transformation of human nature rather than institutional change in its preventive program the movement is helping to perpetuate the status quo.

Mental hygiene is clearly not merely coextensive with medical practise; it enters the fields of education, social and industrial organization, politics, ethics and philosophy. Even those of its problems which are commonly dealt with in hospitals for the mentally ill require more subtle understanding and treatment than are demanded in the ordinary practise of medicine. When one succeeds in removing all the discoverable toxic factors from the population of a hospital for the insane or in counteracting all the elements of fatigue and exhaustion or in modifying the circulatory disturbances which accompany the organic changes in the cardiovascular system of psychiatric patients, one is still left with the great bulk of the hospital population unaffected therapeutically. What is true of the hospital population applies to a larger extent to the vast number of psychiatric cases with which every community is burdened but which never become sufficiently severe to require hospital attention.

The mental hygiene movement therefore demands that a psychiatrist have a comprehensive knowledge of the human organism and of its functioning in complex personal and social relations past, present and future, objective and subjective; for he must deal with the human personality in its most unruly and wilful aspects, with problems of self-assertion, self-concern and self-protection. He attempts to control and train emotions and fancies that clash with reality. The goal of mental hygiene is ultimately nothing less than the discovery of the means for reshaping and redirecting human nature. In so far as the movement has been able to function in the prevention of human maladjustment it has been enabled to do so largely because of the contributions of the psychoanalytic school of psychology. Psychoanalysis has emphasized the importance of the social and especially the sexual setting for the shaping and guiding of the newborn through the complex and difficult route from the asocial and amoral state of infancy and early childhood to the state of socialized maturity. It has furnished the means for a revaluation of the meaning for the development of the individual of the traditional institutions of the family, the schoolroom, the workshop, the playground. It has made possible the differentiation of the manageable from the unmanageable causes of personal maladjustment and pointed the way for those enterprises in child guidance, parental education and educational and vocational reforms which carry the promise of eliminating from childhood and youth at least the more accessible of the impediments to normal growth and functioning. The growth of the adult education movement and the prominent place of subjects concerning mental hygiene in its curriculum promise a more intelligent approach to the problems of the oncoming generation at the hands of its parents and teachers. The extent of the achievement of the mental hygiene movement must be measured largely by its contribution to the promotion of enterprises devoted to the development of wise and capable parenthood. Mental hygiene activity is being directed increasingly toward the provision of opportunities for the normal and healthy to realize their potentialities to the fullest. It is not sufficient that it proclaim its success in terms of provision for the housing and treatment of the insane, defective and delinquent; it must speak in terms of the elimination of the need for these institutions, which are symbols of ignorance, inadequacy and failure.

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See: MENTAL DISORDERS; MENTAL DEFECTIVES; MALADJUSTMENT; PSYCHIATRY; PSYCHOANALYSIS; PSYCHOLOGY; ABNORMAL PSYCHOLOGY; ALIENIST; PUBLIC HEALTH; HEALTH EDUCATION; HOSPITALS AND SANATORIA; CHILD; SEX EDUCATION.

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MENTAL TESTS. The psychologist's attempt to measure "intelligence" by means of tests has in recent years, particularly in the United States, attracted more widespread attention, stimulated more study and research and touched more closely the problems of social science than any other aspect of academic psychology. Not only psychology itself but the fields of education, psychiatry, industry and criminology have felt the effects of the testing movement. Special testing laboratories have been organized; more and more complicated techniques, statistical and experimental, have been elaborated; problems as separate as immigration and the hiring of automobile mechanics have been approached from the tester's point of view. At first uncritical and enthusiastic acceptance of the testing technique in the United States led to an exaggerated view of its importance and applicability. As one by one the previously unsuspected complexities in the problem have been recognized, the attitude of psychologists has gradually become more critical; mental tests are still widely used, but with an increasing realization of the care essential to their proper interpretation.

Before Binet's basic work in mental testing Galton had been concerned with the study of individual differences and had devised a number of tests, largely of sensory discrimination, which he believed might also throw some light on individual differences in intelligence. Cattell in 1890 developed a series of specific tests of a wide variety of sensory and motor abilities. Before 1905 Bourdon, Oehrn under Kraepelin's direction, Münsterberg, Jastrow, Ebbinghaus, Ferrari, Thorndike and others all experimented with tests of individual differences which anticipated methods later used much more systematically. It remained for Binet with the collaboration of Simon to make the first important practical applications, to introduce new methods of scoring and to combine, modify and organize the tests into the first scale of intelligence. The scale, which appeared in 1905, was devised to meet the practical need of distinguishing the subnormal from the normal children in Paris schools. In the main the tests were meant to apply to judgment, but they included a wide variety of tasks involving memory, sensory discrimination, linguistic ability, understanding of abstract terms and other more or less related abilities. In this scale standards were set up for various age groups; limits were set for idiots, imbeciles and morons; and the concept of mental age was introduced to indicate the level of achievement reached by any child in terms of the average performance of children of that age.

The second Binet-Simon scale, which appeared in 1908, attempted to standardize the tests for different ages by assigning to each year level the tests passed by 75 percent of the children of that age. The authors now also sought to measure the intelligence of normal as well as of subnormal children, but they still regarded their scale as being of greatest service in connection with children of inferior intelligence. While they recognized the importance of environment and educational opportunity as well as of native intelligence in affecting the test results, they supposed that with environment nearly equal even tests of information might differentiate between various levels of intelligence.

The testing movement then took on greater proportions. In 1906 Sante de Sanctis in Rome had published a series of tests for use with feebleminded children. In 1908 Goddard translated the first Binet-Simon scale into English and introduced it into the United States. In Italy Ferrari in 1908 and Treves and Saffiotti after 1909 used and modified it extensively. In 1910 Katherine Johnston made first use of the scale in England. In Germany Bobertag in 1911 published a version of the 1908 Binet-Simon scale; and in 1912 William Stern, who for a long time had been actively interested in individual differences, introduced the idea of an intelligence quotient (the I.Q.) obtained by division of the subject's mental age by his actual, or chronological, age—an idea which was later adopted by Terman and was used so widely in the United States as to become almost symbolic of the whole mental testing movement. In the United States there were further revisions by Goddard

in 1910 and by Kuhlmann in 1911. Binet and Simon published a slightly revised version of their second scale in 1911, and after considerable application of this new scale Terman and his collaborators in 1916 published the Stanford revision, which is still in use as the most important single instrument in the United States for the testing of intelligence.

There were other revisions and other scales. Yerkes, Bridges and Hardwick in their point scale introduced a new method of scoring in which age groupings were disregarded and the total score was used as an index of level of intelligence. Herring's revision introduced certain variations in scoring and in test arrangement but followed the Binet-Simon scale in essentials. A definite and important departure from the Binet-Simon type of test was made by Pintner and Paterson in their performance scale, which consisted of a series of tests in which the use of language was almost entirely eliminated and problems were to be solved by one or another variety of manual manipulation. This scale was regarded by its authors as especially valuable in the case of children with language handicaps. A somewhat similar scale was used in the United States during the World War as an individual examination for foreign recruits. Performance tests or scales have also been devised by Drever and Collins, Arthur, Ferguson, Porteus, Lipmann, Bogen and Peterson.

Scales which have some features of the performance type have been developed for very young children; the Merrill-Palmer scale is used in the case of preschool children ranging in age from about eighteen to fifty-three months. Two well known series of tests for infants are Gesell's developmental schedule and the Bühler tests. How far these tests measure the sort of aptitude involved in the tests for older children remains to be determined.

In all of these tests and scales the testing is individual, the examiner being concerned with only one subject at a time. In recent years, especially since the World War and particularly in the United States, the development has been in the direction of group tests, in which a large number of individuals can be examined at one time. The use of group tests received its most important stimulus during the war, when the army psychologists attempted to measure the intelligence of more than a million and a half recruits for purposes of determining their capacity for various types of service. Tests known as "army alpha" and "army beta" were used, the latter a non-language group test for use with illiterates and foreigners. The average score of the drafted men corresponded to a mental age of approximately thirteen years, which was widely misunderstood to mean that the average white American had the mentality of a thirteen-year old child. The more probable explanation is that the average soldier could do no better in these tests than the average school child of thirteen, for the tests, especially the army alpha, had enough in common with school work to give the school child a great advantage over recruits with comparatively little schooling as well as over those who had been out of school for many years. This result has also been taken to mean that intelligence does not develop much beyond the thirteenth year (the limit is sometimes placed at fourteen, occasionally at sixteen or slightly higher), but the highly scholastic nature of the tests and their inability to measure the various possible types of development which adult intelligence may undergo make such a conclusion unwarranted.

Since the war there has appeared an almost bewildering variety of group tests of intelligence, making use of both linguistic and non-linguistic material and ranging from tests for kindergarten children to those for college graduates. One important result has been the collection of a mass of data relating to apparent differences in intelligence between various groups—groups in different occupations, in different parts of the country, of different national origins, of different social levels—from which conclusions hastily drawn and insufficiently established have been widely and uncritically accepted. A large part of the early testing was based upon the assumption that native general intelligence could be measured accurately by the tests. Binet's caution against the use of tests for purposes of comparison when the environment and the background of the subjects differed was to a considerable extent disregarded, and the testers proceeded as if the tests measured native intelligence entirely apart from environmental influences. The fact that lawyers and bank presidents and their children achieved much higher ratings in the tests than did bricklayers and farmers and their children was widely accepted as proof of the innate superiority of the former and as an indication of the correctness of the existing occupational hierarchy. The superiority of white over Negro children and of north European over south and central European immigrants to the United States was regarded as proving beyond

doubt the existence of native race differences in intelligence. The fact that city children were superior to country children was taken to mean that the most intelligent families and stocks had left the country for the city.

Although these opinions are still current to a considerable degree, there is a difference of opinion among psychologists as to whether intelligence as measured by the tests is the cause or the effect of social environment. There has recently been an increasing emphasis upon the importance of social factors, at least in connection with group differences, and a growing realization of the part that culture in the widest sense may play in determining the results. The more obvious factors, such as familiarity with the language in which the test is given and the amount of formal schooling of the subjects, are usually recognized and the attempt is made to keep them constant as far as possible. The superiority of urban over rural schools can clearly account for much of the difference between rural and urban children; proof of a selective migration on the basis of intelligence has so far not been given. There are, however, more subtle cultural differences, in attitudes toward the test situation and the examiner and in habits of thought and speech, which may affect intelligence test results considerably, especially as far as racial differences are concerned, and which have for the most part been entirely neglected. The emphasis on speed, for example, which is an important factor in most tests of intelligence, may unduly penalize rural as compared with urban children and does not take into account attitudes of peoples not subject to the spirit of individual competition which the test situation postulates, and which is at least in part a creation of our particular economic system.

Cultural factors may enter more subtly and more specifically. A southern Negro child can hardly be expected to know (as in one well known intelligence test) that "silence must prevail in churches and libraries," when all the churches which he has attended are obvious witnesses to the contrary. A reservation Indian will hardly realize that "schools are important because of the preparation they give for later life," when he can clearly see that there is no connection between the school he attends and his later life. The tests are tests of intelligence, if at all, only within the restricted sphere of the culture in which they have originated. Our particular culture is one which stresses, at least in theory, the more abstract linguistic abilities; our concept of intelligence is by no means applicable without change to other groups and other cultures, which have their own legitimate criteria of achievement.

Within our own culture there are also direct indications of the part which the social environment may play in determining intelligence test results. Freeman and others have shown that when the environment of foster children is improved markedly, there is a distinct improvement also in their test scores; it follows that the environment, at least in part, creates differences in intelligence and that the occupational differences in intelligence test scores cannot be taken to prove that the most intelligent people are necessarily to be found in the upper classes. The great overlapping of abilities between the various social groups and the fact that so little is known about the inheritance of intelligence within any one group should impose considerable caution in connection with any such conclusion. It has been shown further that when children of a supposedly inferior race, for example, the Negro, are tested in a relatively favorable environment like New York City, they do very much better than Negro children in the south; in a recent study by Peterson and Lanier Negro children in New York obtained results equal to those of white children. The results obtained by the tests of the army psychologists also showed a marked superiority of northern over southern Negroes as well as a superiority of the Negroes in several of the northern states over the whites in several of the states in the south. The argument that these facts can be explained on the basis of a selective migration of the most intelligent Negroes from the south to the north and that the change in environment is therefore not responsible for the difference between the two groups has been refuted by recent studies at Columbia University, which have failed to reveal any selective factor of this kind and have, on the other hand, demonstrated a definite tendency for the test scores of Negro children to improve proportionately to the length of time they have lived in the more favorable environment.

The question of the superiority of the Nordic, or north European, over other European peoples has also been approached from the standpoint of mental tests. The differences noted by the army psychologists in the test results of recruits from the various European countries were interpreted to indicate a racial hierarchy of intelligence, the descending order being Nordic, Alpine, Mediterranean. This finding and its interpretation were hailed by many racial theorists in the United

States as a welcome corroboration of their view that the future of the country depended upon the numerical predominance of the tall blond dolichocephalic north European and upon a restricted immigration from central and southern Europe. While this view still has considerable popular currency, it is no longer held as tenable by psychologists. Brigham and others who played an important role in spreading the evidence for Nordic superiority now insist that the test results cannot possibly be used to support such a position. A recent study made in Europe by Klineberg revealed no consistent superiority of any one European physical type over another.

The comparison of children of various national and racial groups is complicated by possible differences in rate of growth and in age of biological maturity. If races differ in their rate of physiological development and if there is any correspondence between physiological and psychological maturation, the direct comparison of the test results of twelve-year old girls of two different races can scarcely be justified. The many studies of the relation between mental and physical development have so far yielded mainly negative results; even when the correlation between physical and psychological indices has been positive, it has almost always been too low to be significant. Nevertheless, it is quite possible that the technique of correlation which is usually employed is not applicable to the type of relation which exists. Careful follow up studies of individual cases from both the physical and psychological sides are needed before the problem can definitely be solved. As far as races are concerned, the assumption of a difference in the age of biological maturity is still open to question. There are marked differences within the same racial group when the social and economic status differs (the well to do group maturing more quickly than the underprivileged group); until these factors are adequately controlled no conclusion as to race differences in the age of biological maturity can be justified. There are, however, differences in the age of biological maturity of various groups, whether according to race or social class or geographic location; and this fact introduces a possible complicating factor in comparisons of group differences in intelligence.

Sex differences in test performance appear to be negligible; as the tests were standardized on girls and boys alike, this result was perhaps to be expected. There seems, however, to be a tendency for girls to excel in those tests in which linguistic factors predominate and boys in those in which mechanical or mathematical abilities are involved. Dependent children have usually given a low average; but as their environment has usually also been defective, the results are difficult to interpret. Delinquent children have usually although by no means consistently shown low results; delinquent adults have as a rule shown little deviation from the non-delinquent average. Deaf and blind children generally rank low, even when appropriate changes have been made in the testing technique.

The widely accepted belief in the hereditary group differences in intelligence which the test results have seemed to demonstrate must for the present be regarded as unproved. If intellectual differences between racial and social groups do exist (and this point is still debatable) the testing technique is nevertheless incapable of proving their existence. Within the same or nearly the same social and economic stratum, however, where presumably comparable social and educational factors have been at work, there are marked individual differences which can best be explained on the assumption of unequal intellectual endowment. This endowment as measured by the tests appears to be distributed according to the normal (Gaussian) probability curve, most of the results falling at or near the midpoint, with a gradual and symmetrical decrease in numbers as the best and the poorest scores in the distribution are approached. The common belief is that the position of an individual in this distribution is relatively constant ("constancy of the I.Q."). But the I.Q. is constant only if the accompanying conditions also remain constant. If there are marked social, educational or economic changes in the subject's status or significant changes in his health and his personality, the I.Q. may likewise change considerably. This has been demonstrated in the case of southern Negro children who have migrated to New York.

The tests can in most cases be relied upon to distinguish subnormal from normal children, although there is danger of a wrong diagnosis when tests are administered without sufficient experience and when examiners fail to take account of attitudes, of previous backgrounds and of factors of character and personality which may markedly affect the results. The mental test can safely be used only as one instrument among others in a diagnosis of mental defect, but as such it has proved itself useful in educational and psychiatric practise. In education the men-

tal test can be of greatest value in those cases in which the school achievement falls far below what can reasonably be expected from the child on the basis of his test performance; individual analysis and guidance may then bring about an improvement. Unfortunately, however, the mass testing in American schools has on the whole paid little heed to the special problems of the individual child. In connection with the very superior child mental tests have been used in many schools in order to separate out those children who could presumably bear a heavier and more advanced schedule. Recent attempts to apply the technique of mental testing to the problem of genius and even to assign I.Q.'s to the greatest historical figures on the basis of what is known of their earliest achievements are examples of the unscientific exaggeration to which the preoccupation with mental tests may lead. To identify genius with a high I.Q. is a most misleading oversimplification. Mental tests have been used also as part of the requirements for entrance into a great many colleges in the United States. Their similarity in general character to the kind of test which the student meets in his college work makes them probably fair instruments of selection in most cases; they are unfair, however, to the student who has already begun to develop along highly specialized lines, and to whom many of the problems raised by the tests have not the slightest interest. Here too the exceptional individual is often neglected in the mechanical handling of a large number of cases.

The most important achievement to the credit of mental tests, their most significant improvement over the judgment of intelligence by means of mere observation, lies in their relative objectivity. An acceptable test must give approximately the same result in the hands of two different examiners or in the hands of the same examiner on two different occasions; otherwise it cannot be regarded as reliable. Moreover a valid mental test must correspond very closely with other criteria of intelligence, such as school grades or degree of success in other directions, and with the judgment of those who are well acquainted with the subjects being tested. The reliability of the tests in actual use is usually very high, but their validity is often very low. Correlations with teachers' estimates and with school and college grades are fairly low. Correlations with educational tests are usually high, but educational tests in their construction as well as in their content are often so similar to mental tests

that a high correlation between the two means little. It is pertinent to ask whether the intelligence tests really test intelligence. To assume that "intelligence is what the intelligence tests test," as one psychologist more or less seriously expressed it, is an admitted evasion of an issue which although perhaps never entirely lost sight of in academic circles has often been comfortably disregarded by those who are interested only in practical applications.

The question of the existence or non-existence of a "general intelligence" which can be tested and measured has been answered in the affirmative by Spearman, who maintains on the basis of mathematical evidence that in the measurement of any ability there enter two independent factors, one the "general factor," and the other the "specific factor" (or factors), which varies within the individual from one ability to another. Thorndike believes that individuals differ not in the kind or amount of any general mental energy but in the number of physiological connections in the central nervous system; the highest intellect differs from the lowest only in the capacity for having more of these connections. Thomson has suggested that the number of factors which enter into an activity like a mental test are samples of all those which the individual possesses. Kelley and more recently Garrett, Brigham and others have accumulated statistical evidence of a "multiple factor" theory of intelligence; a number of more or less general or group factors, such as linguistic ability, mechanical ability and memory, are thought to make their relatively independent contribution to "general intelligence." This view, which appears to be gaining ground in academic circles, is supported by the relatively low correlations between the so-called abstract linguistic and the concrete non-linguistic, or performance, type of mental test; both types purport to measure general intelligence, but it is highly probable that something quite different is being measured in the two cases. In the light of these findings it is doubtful whether one ought to make any use whatever of the concept of general intelligence.

The usual criticism of intelligence tests to the effect that they measure only one aspect of the total personality and therefore only one factor entering into the later success or failure of the subject has been fully recognized by most mental testers. The frequent discrepancy, for example, between intelligence test results and the academic success of college students has been explained on the basis that study habits, interest

motivation, persistence, emotional qualities as well as intelligence all play an important part which the intelligence test as such makes no attempt to evaluate. In recent years the attempt has been made, especially in the United States, to develop tests which will measure non-intellectual instead of purely intellectual traits. The Downey will-temperament test, the Moss social intelligence test, Moore's test of aggressiveness, Hartshorne and May's studies in deceit, the Allport ascendance submission study, the Pressey cross out tests, Henning's tests of cooperation and the many personal inventories and rating scales are among the most important in this field. These tests have not been sufficiently standardized to permit of their use for scientific purposes, and their validity and reliability are for the most part far below those of the usual mental test.

Tests of special abilities as distinct from general intelligence have been used widely in vocational guidance and in industrial psychology. Of the special aptitude tests the Seashore music tests and the Stenquist tests of mechanical aptitude are the best known. In addition a large number of vocational tests have been developed in psychotechnical laboratories in various countries. Tests for automobile chauffeurs, for mechanics, draftsmen, telephone operators, telegraphers, typists, bookkeepers and others have been found to be of value, although usually only in combination with other indications of special ability. It is probable that tests of special aptitude will retain their place in industry and that the measurement of specific rather than general abilities will be the more permanent contribution of the mental testing movement.

In general it may be said that the mental test has a definite although limited application. With all its defects it marks a step in advance of the more or less haphazard subjective judgments of a child's intelligence which are often used in its stead. When used in combination with other criteria and in the hands of a careful examiner who is prepared to give due weight to the qualitative as well as the purely quantitative aspects of the performance, it may be of real value in education, in psychiatry and in vocational guidance. The individual test, which is more troublesome to administer but which makes qualitative observation possible, is therefore to be preferred to the group test. The mental test presents the subject with a problem to be solved, and the subject's manner of approach to the problem as well as his success or failure in the solution may often give the examiner valuable information. The greatest dangers lie in the mechanization of the technique and of the interpretation, in the undue stress which is often laid upon the purely quantitative aspects and in the failure to appreciate all of the social and cultural factors that enter into the result.

OTTO KLINEBERG

See: PSYCHOLOGY; EDUCATIONAL PSYCHOLOGY; CHILD PSYCHOLOGY; CHILD; JUVENILE DELINQUENCY AND JUVENILE COURTS; VOCATIONAL GUIDANCE; ABNORMAL PSYCHOLOGY; PSYCHIATRY; MENTAL DEFFCTIVES; MENTAL DISORDERS; MENTAL HYGIENE; PERSONALITY; GENIUS; HEREDITY; ENVIRONMENTALISM; RACE.

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MERCANTILE CREDIT is that form of credit which is used in financing the movement of merchandise from the producer to the retailer or the industrial consumer. It includes sales of goods on time by one merchant to another as well as time transactions among producers themselves and sales on credit by producers to middlemen. It is not essential that the goods be resold by the purchaser in the same state or even in changed form. Credit extended by a manufacturer or distributor when machinery, equipment and supplies are sold to an industrial consumer is mercantile credit, even though the machinery thus purchased is resold but indirectly through the addition to the price of the finished product of an amount covering its depreciation and obsolescence.

While it is true that mercantile credit was used to some extent as far back as the days of Roman domination, its most rapid development did not commence until the establishment of fairs and other periodical markets in Europe and Asia. During the thirteenth, fourteenth and fifteenth centuries the bulk of European commerce was transacted at fairs. At these points there gathered large numbers of merchants and artisans for the purpose of buying or selling commodities of various descriptions, while many other people gravitated to such places primarily for amusement. The fairs of Nizhni Novgorod and Kiev in Russia, Lyons in France, Senigallia in Italy and Kiakhta in Mongolia became established institutions and were known to traders everywhere. The fairs were found to be convenient places for making payments or for settling obligations incurred at the fair or on previous occasions, and it became common practise to make bills of exchange payable at the various fairs, which were held at intervals of from three to twelve months. In fact the process of making "payments" occupied such an important position that at some fairs most of the time was devoted to it and a few fairs specialized in that function alone; as, for example, those of Novi, Italy, which were held four times a year almost exclusively for the purpose of adjusting accounts.

A considerable amount of the business transacted at the fairs involved a credit period of from three to six months, for which bills of exchange were drawn and made payable at a specified fair. Instead of actual settlement in cash bills of exchange were offered by holders to their creditors and if accepted by the latter the debts were wiped out. To the fair merchants brought their books, called *bilans*, which showed the debits and credits, and offered to their creditors some of the debtors who owed them money of a like amount. Upon acceptance the substitution was duly entered in the *bilan* and the process of making payments proceeded until all obligations were settled; only small balances were actually paid in cash. This practise of setting off mutual debts doubtless gave rise later to the establishment of clearing houses for banking purposes; it also facilitated the use of circulating credit as a medium of exchange.

Gradually mercantile credit grew in importance until it became a dominant feature in some lines of business. Institutions specializing in such credit came into existence, as exemplified by the rise of the factor in England. The factors in the woolen industry dominated and abused their position to such an extent that in 1695 Parliament passed an act intended to curb some of their activities. The normal procedure in the woolen industry was for the wool merchant to sell the wool through the factor to the maker of cloth, who turned the finished goods over to the factor for sale to the draper. According to the act of 1695 the factor was required to obtain promissory notes from the draper when goods

were sold to him and the draper was obligated under penalty to give such notes. The maturity of the notes was limited to six months, and they were to be transferred to the maker of cloth, who in turn would use them as cash in payment for wool purchases. On promise to sell their goods first factors made the cloth producers forego their demand for notes from the drapers, at the same time extending to the drapers longer terms than could possibly be given by the cloth makers. The factors then offered to finance the cloth makers in their purchases of wool and in their sales to drapers on long time credits, both at very high rates.

With the rise of the factory system of production the wholesaler became the foremost channel for the distribution of goods. One of the major functions of the wholesaler has been to finance the manufacturer when such help was needed and to extend credit to his customers. So long as manufacturers operated on a small scale and were weak financially, wholesalers occupied an almost monopolistic position through their extension of credit to the former. But as manufacturers came to accumulate adequate capital, their dependence upon the wholesalers for financial assistance was greatly diminished. The development of department stores, mail order houses, chain stores and other forms of large scale retailing had a similar effect upon the wholesaler. The great bulk of the retailers, however, still depend largely upon the wholesaler's financial aid.

During the first half of the nineteenth century the mercantile credit system of the United States was based in the main on the promissory note and the trade acceptance. Toward the latter part of the century the open book account came into prominence with the offer of cash discounts to stimulate payment in advance of the date due. This has been regarded in many quarters as an undesirable change, and attempts have been made to restore the trade acceptance, on the theory that it is a superior credit instrument inasmuch as it shows on its face that it has arisen out of a commercial or trade transaction and has been accepted by the drawee, who thus acknowledges his indebtedness. Trade acceptances may be readily discounted at banks, since such double name paper is said to minimize the risk involved. By discounting the acceptance the seller secures immediate possession of funds from the sale of his goods, thus increasing his capital turnover and reducing the cost of his business. The trade acceptance also eliminates the problem of the taking of unearned discounts by customers, is held to result in a smaller percentage of returned goods and by reducing the use of open book accounts presumably places credit on a higher plane. When signed by strong acceptors (and sometimes by one or more subsequent endorsers), trade acceptances are said to be an ideal commercial paper for open market dealings. In addition to being dealt in by bankers, they can also be used by merchants for temporary investment of idle funds.

Accordingly in 1915 the Federal Reserve Board under the authority of sections 13 and 14 of the Federal Reserve Act encouraged the use of trade acceptances by establishing a discount rate on such acceptances "somewhat lower than that applicable to other commercial paper." The Federal Reserve Board and Banks have since made efforts to further the use of trade acceptances and to develop what they regard as a high class double name paper. During the World War the trade acceptance movement was sponsored as a device for mobilizing commercial credit and as a result there was created the American Trade Acceptance Council, which was to carry on an educational campaign in the interest of the trade acceptance; in 1919 this council was reorganized as the American Acceptance Council and its scope was widened to include bank acceptances.

Efforts to popularize the trade acceptance have thus far met with indifferent success. In the first place, the trade acceptance is not adapted to transactions involving short periods of time or to lines of trade in which purchases are made at frequent intervals and in relatively small amounts. It has therefore never been popular in the grocery trade and in other lines of business where credit is extended for not more than approximately thirty days and where customers have what may be termed "running accounts." Moreover it is frequently impossible for a buyer to know in advance whether he can take the cash discount or whether he will have to take the full credit period allowed by the terms. Finally, the use of the trade acceptance tends to convert discounting customers into buyers by acceptance, which results in a lengthening of the credit period. While trade acceptances are quite common in Europe, their use in the United States is greatly limited because of the cash discount system which prevails in this country and is little used abroad. So long as the cash discount system predominates, trade acceptances, which are given by buyers, who necessarily take the net

terms, must represent inferior credit risks. Trade acceptances may be a good substitute for net terms alone under certain conditions and may also be used successfully as a means of forcing dilatory buyers to pay their bills promptly rather than as a medium of revolutionizing commercial credit. Among some of the other important instruments now in use in the United States in connection with mercantile credit are promissory notes, checks, drafts of all kinds including bills of exchange and commercial letters of credit.

Mercantile credit is closely related to bank credit; the vast number of credit instruments created by mercantile credit become the feeders for bank credit. The purchaser of goods for resale either pays cash for his goods or buys on time. To obtain the cash with which to pay immediately or with which to take the cash discount he frequently borrows at his bank on his own promissory note. Should he desire to refrain from making payment until the date it falls due, it behooves the seller to carry the financial burden, which he in turn may transfer to his bank either by giving his own promissory notes or by discounting the notes or acceptances secured from his customers. In either event much of the mercantile or commercial credit is translated ultimately into bank credit. Inasmuch, however, as local banks are reluctant to accept large quantities of single name paper or to make loans on accounts receivable, sellers frequently must obtain the necessary capital through the sale of securities, through borrowings in the open market or through the sale of open book accounts to special institutions, such as discount companies, finance companies, or to factors operating in the textile and cotton trades.

The larger the amount of commercial paper the greater the circulating medium of exchange, as is evidenced by bank deposits and by paper money issued on that basis. The velocity of circulation is greatly increased when such paper is eligible for rediscount at the Federal Reserve Banks; this accounts to some extent for the revival of interest in the trade acceptance, aimed at the conversion of open book accounts into "closed" accounts, during the period of depression which set in during the latter part of 1929.

The terms under which mercantile credit is extended in the various trades are well established; they are fixed by custom, contract or rule of the respective trade associations. Terms of sale usually involve the length of the net credit period, the size of the cash discount, if any, and the time when it may be taken. They relate also to the type of credit instruments which must be given by the purchaser and the conditions thereof. A number of factors influence the length of the credit period as well as the size of the discount given by sellers to their customers; among these are the nature of the goods involved, whether they are seasonal in character, staples or specialties and whether they are finished goods intended for the ultimate consumer or raw materials, semimanufactures, machinery, equipment, or supplies intended for industrial consumption. Other factors are competitive conditions, the margin of profit involved, the nature of the credit risk, sectional or geographical conditions and the position of the business cycle.

At first the responsibility for the management of both the credit dispensing and the collection functions in the mercantile field devolved upon the head of the business enterprise. As the business grew the credit making power was delegated to the bookkeeper. Customers no longer came under the personal observation of the proprietor. With further expansion in the number of customer accounts credit granting powers were turned over to officials in responsible positions. Thus there evolved the office of credit manager, whose principal functions are to keep losses down to a minimum and to maintain sales at the highest level possible. The performance of these functions became more and more complex with the increase in population, the expansion of credit business, the multiplication of laws governing it and the intensification of competition. Adequate technical training in credit management in addition to a broad knowledge of business and economic fundamentals is now becoming indispensable to scientific management of mercantile credit, and credit management is rapidly acquiring the status of a profession.

The first problem in credit management involves the proper selection of credit risks. To judge a prospect's willingness and ability to pay and to secure additional information in revising active accounts there have come into being a number of agencies and organizations whose major purpose is to collect and disseminate credit information. Among the oldest agencies were R. G. Dun & Company and the Bradstreet Company. The former was established in 1841 following the crisis of 1837, the causes of which were found to have been deeply rooted in the haphazard granting of credit to merchants. It was organized by Lewis Tappan, a New York

silk merchant whose jobbing house failed during the depression following the crisis of 1837 and who saw a possibility of capitalizing on the records which he had gathered for some time concerning his customers' credit standing. In 1859 the company passed entirely into the hands of R. G. Dun & Company. The foundation for the Bradstreet Company was laid in 1849 by John M. Bradstreet, a Cincinnati attorney, who gathered much information concerning debtors and creditors of a large insolvent estate for which he acted as assignee. With this information as a basis he founded Bradstreet's Improved Commercial Agency, which was incorporated in 1876 as the Bradstreet Company. The agencies operated many offices throughout the United States, Canada, Mexico and Cuba and maintained subsidiary companies in England, France, Belgium and throughout central and northern Europe. The principal functions of these companies were the publication of rating or reference books, the issuing of special reports upon the request of subscribers and the supplying of derogatory information to all interested subscribers. Both concerns published business magazines containing vital information concerning the state of business and compiled statistics on commercial failures and their causes. They engaged also in other educational and research activities, as, for example, Bradstreet's index of prices. In February, 1933, the Bradstreet Company was acquired by R. G. Dun & Company, becoming Dun & Bradstreet, Incorporated.

In addition to the general mercantile agencies here are a large number of specialized institutions which limit their activities to one or a few lines of trade or concentrate upon a small geographic area. They are either privately owned or cooperative in nature and maintained by trade associations. Some of them, particularly the mutual or cooperatively owned agencies, collect and disseminate only ledger data. Others operate along much the same lines as do Dun and Bradstreet's, while still others perform special functions, as in the case of the Credit Clearing House, which has established what is known as "credit checking service" actually rendering decisions as to whether an order should be accepted or declined.

Sellers secure much valuable information concerning customers and prospects through direct interchange among themselves. Special trade groups have been organized in most cities for the purpose of exchanging credit information at meetings held periodically under the auspices of the local associations of credit men. Many trade associations maintain credit bureaus which either give complete ledger data on credit risks or supply the names of creditors for direct clearance by the inquirer. Much credit information can be obtained also from miscellaneous sources, such as corporation manuals, corporation rating books, trade and financial publications, and from the creditor's own records. The personal interview with the prospect or customer affords an additional means of obtaining valuable credit data.

One of the most valuable sources of credit information is that afforded by the Credit Interchange bureaus maintained on a non-profit basis by a number of local associations of credit men under the general supervision and management of the National Association of Credit Men organized in 1896. It has at the present time 137 local associations with approximately 22,000 members from among the leading manufacturers, wholesalers and bankers of the United States. The general purpose of the organization is to improve credit standards and practises for the general welfare of business. This purpose is accomplished through two general types of activity. The first comprises all activities looking toward the general improvement of credit and business standards and includes the promotion of such federal legislation as the Bankruptcy Act and the Federal Reserve Act and of such state legislation as the Bad Check Law and the Bulk Sales Laws as well as educational work through publications and credit surveys. Under the auspices of its Credit Institute courses are provided for those engaged in credit work. The second type of activity has a more immediate and direct bearing upon profit making and covers the work of the various service departments of the association. The Credit Interchange Bureau department, which initiated its activities in 1919, provides a nation wide interindustrial exchange of ledger information showing the actual and current record of paying habits of purchasers. Sixty individual credit exchange bureaus, headed by the central bureau in St. Louis, are now maintained in this system. The Adjustment and Collection Bureau department of the National Association of Credit Men, operating 72 local adjustment and collection bureaus, offers a service national in scope with a personnel experienced in the handling of collections and in liquidating failing businesses in which creditors are involved. A Credit Group Department is maintained which through the organization of

both local and national credit groups within specific industries fosters the discussion of credit problems of mutual interest. The Business Service Department of the association deals with the rehabilitation of financially embarrassed businesses which are worthy of such assistance, while the Fraud Prevention Department cooperates with the Department of Justice in prosecuting commercial crooks and in combating fraud.

In foreign trade the extension of mercantile credit is well nigh indispensable. Even the cast iron rule of some American manufacturers who insist on "cash against documents in New York" (CAD-NY) terms involves credit and risk. The degree of willingness of exporters to grant credit and the liberality in terms to a large extent determine the amount of business secured at the expense of exporters from competing countries. Foreign credit extensions, however, are hazardous unless exporters are fully prepared to handle business on that basis.

Among the factors which have added to the obstacles in mercantile credit in foreign trade are the difficulty in securing reliable and adequate credit information concerning foreign customers; the distance separating the accounts from the exporter; inadequate banking facilities in some of the countries through which drafts may be presented for payment or acceptance or which can be used for letter of credit arrangements and as a source of credit information; the complications involved in attempts to obtain redress in foreign courts; the high cost of enforcing payment; unfavorable exchange regulations; and lack of knowledge of the ever changing and inadequate commercial laws of foreign countries. Finally, the time normally extended on foreign transactions is usually much longer than that in domestic trade. Prior to the World War, for example, the drafts drawn by German exporters on their South American customers matured in from three to twelve months and on customers in Asia Minor in from four to nine months. The documentary drafts which form the bulk of payments through London banks are generally drawn for two to four months. Even in the sale of goods by United States exporters to customers in Great Britain the terms are anywhere from one to three months, while for similar types of merchandise sold to domestic customers they are considerably shorter. A still longer extension of credit on the part of the exporter is necessary when foreign customers are located in agrarian countries. No payments can be expected in many cases until the importer receives payments from his customers, who in turn depend upon the results of the harvest. As countries become more industrialized and the income of importers is less intermittent and irregular, greater facilities may be expected for the handling of mercantile credit in foreign trade.

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See: CREDIT; BANKING, COMMERCIAL; EXPORT CREDITS; CREDIT INSURANCE; FINANCIAL STATEMENTS; MARKETING; WHOLESALING; FAIRS.

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MERCANTILISM, originally a term of opprobrium, lacks the clear cut meaning of an expression coined for purely scientific purposes. Used sporadically by the French physiocrats, the term was brought into general currency through Adam Smith, who devoted about one fourth of *The Wealth of Nations* to a relentless criticism of what he termed "the commercial or mercantile system." His attack started with the views of money which he attributed to the mercantilist writers; but the greater part of his discussion referred to commercial policy and consequently treated mercantilism as a system of protection. More than a century later in 1884 a greatly different use of the word was introduced by Gustav Schmoller in his essay, *Das Merkantilsystem in seiner historischen Bedeutung*. In Schmoller's opinion mercantilism was essentially a policy of economic unity—to a large extent independent of particular economic tenets—expressing the efforts of territorial princes, German in the first place, to overcome the disruption caused by mediaeval conditions. In England at about the same time William Cunningham in *The Growth of English Industry and Commerce* (1882) viewed mercantilism still dif-

ferently as the expression of a striving after economic power for political purposes manifesting itself particularly in England. The discordance between these views was principally due to a confusion between the ends and means of economic policy; each of them pointed to something of fundamental importance in the development of economic activities and ideas in the period between the Middle Ages and the industrial revolution.

If one considers mercantilism first as a system of national economic unity, it is quite clear that there was an enormous task awaiting the rulers of most continental states at the end of the Middle Ages. Under feudalism independent petty rulers and even quite ordinary private landowners had usurped the power of the state, harassing and impeding trade and industry and laying both under contribution for their own benefit. Among the numerous manifestations of this tendency the most important was perhaps the almost endless confusion caused throughout Europe by tolls on rivers and highways as well as by the impediments placed on trade between different provinces. An English chronicler, William Wykes, speaking of conditions in the late thirteenth century referred to *furiosa teutonicorum insania*, "the wild madness of the Germans"; but the condition was quite as widespread in France. On all the great rivers there were separate tolls for each ten or at most fifteen kilometers, which the trader had to pay in succession. The work of unification necessitated the doing away with all this and the creation of national customs systems.

In England, where very little of this confusion had ever existed, unification was achieved in the course of the thirteenth century; but on the continent progress was slow and very little was accomplished before the nineteenth century. By far the most important success was scored by Colbert in France through his tariff of 1664. This tariff did away with most of the duties separating from one another the provinces constituting the so-called *cinq grosses fermes*; something like three eighths of the French monarchy was thus made into a single customs territory. But this was in respect only of interprovincial customs. With regard to river and highway tolls Colbert was able to achieve very little; and the customs boundaries between the rest of the provinces he left entirely untouched, with the result that areas conquered about the middle of the sixteenth century were treated as foreign territory from a customs point of view until the French Revolution. Nevertheless, the French tariff of 1664 was almost the only important measure in the direction of customs unification carried out under mercantilism, although Colbert for one was quite aware of the connection between the work of unification and mercantilist aims in the fields of money, foreign trade and colonization.

Throughout this period the towns had a well thought out and surprisingly consistent policy, which also tended to split up the unity of a state's territory. Each town attempted to subject the adjacent countryside to its control and to hamper in every possible way the trade of competing towns. Mercantilist policy involved the substitution of a scheme which would give the whole territory the benefits that each town had tried to arrogate to itself. The direction of town policy need not necessarily be changed, but its scope must be enlarged from a municipal to a national field.

One such victory of national policy is to be recorded in the famous act of Queen Elizabeth of England—or of her minister William Cecil, Lord Burghley—the Statute of Artificers . . . and Apprentices (1562). Besides Colbert's unifying tariff of 1664 it is perhaps the only successful achievement of mercantilism in the field of economic unity. Based upon legislation which went back to the Black Death, it created a consistent national system of regulation of internal trade and industry in town and country alike, which lasted on paper until the early nineteenth century (1813–14). The positive importance of this measure consisted in its national scope. There was nothing in it favoring the towns at the expense of the countryside, and it did nothing to perpetuate the craft guilds, the typical products of town policy and economy. The guilds were thus prevented from becoming a component part of the trade regulatory system, a circumstance which contributed to weakening the hold of the mediaeval order. Otherwise the factors working for economic change had little relation to mercantilist measures, in England as in other countries. The statesmen of later Tudor and earlier Stuart times made unusually successful attempts to revive the old system of regulation, but that very fact worked in the direction of undermining it when the parliamentary party became victorious.

The importance of this development becomes clear when the French parallel is studied. For in France mercantilism accepted and tried to nationalize the mediaeval system. By the edicts

of 1581, 1597 and 1673 the guilds were made compulsory throughout the country even outside the towns; and although these measures came far from achieving their purpose, the whole mediaeval system of regulation was given through them a new and wider lease of life. At the same time the craft guilds remained as exclusively local as they had ever been, so that labor and industry were prevented from flowing freely between the different parts of the country. This was probably one of the reasons why the industrial revolution began in England instead of France. French mercantilism saw the rise of a very extensive civil service engaged in industrial as well as other types of supervision, while England had not even the semblance of such a body. The famous *règlements*, issued at an ever increasing rate from the time of Colbert onward, all perpetuated the mediaeval treatment of industry. A great deal was thus achieved in the perfecting of production on the old lines; but the development of the characteristic aspect of modern industry, mass production for mass consumption, was hampered rather than furthered through the most effective and consistent forms of mercantilist regulation.

The situation was somewhat different in the field of international trade and business organization in general. On the double foundation of private partnerships, mostly of Italian origin, and mediaeval merchant guilds there arose a network of new business corporations, of which the English were more important for later developments, although the Dutch were at one time more powerful. The distinguishing feature of the so-called regulated companies in England which proved so remarkably successful in Atlantic, Mediterranean and Baltic trade was that each merchant traded for himself, although under the rules of the company and with the use of its organization. These chartered companies paved the way for the joint stock company, the direct ancestor of the most important of all modern forms of business organization, the corporation. For the history of mercantilism the important question is to what extent these developments were due to mercantilist policy. In Portugal, Spain and France the chartered companies and the organization of foreign trade and colonization in general were the outcome of state initiative; but in Holland and England, the two important countries in this field, the trading companies were created by private merchants. The state confined itself to giving them more or less extensive privileges, for which they often had to pay dearly, one of which was the preventing of others from use of the more advanced joint stock form of organization. In 1719 the English Parliament passed the Bubble Act, which was intended to check a general growth of company organization and may have achieved at least part of its object. Altogether it is far from clear that the remarkable development of company organization was to any great extent due to mercantilist policy in those countries where it was most important.

The results of mercantilist activity in overcoming the disruption caused by mediaeval conditions were thus rather limited. The laissez faire era may even be considered its executor in this respect. Through the influence of the French Revolution in other countries as well as in France and through the rise of new ideas in the field of economic policy the end of the eighteenth and the first half of the nineteenth century saw changes introduced without much difficulty for which mercantilist statesmen had been striving in vain for several hundred years.

But efforts in the direction of economic unity were only the frame of mercantilist policy. The next question must be, for what purposes mercantilist statesmen wanted to use the resources of a unified state. The answer is, principally for strengthening the powers of the state in its competition with other states. While the mediaeval conception of the object of human effort was the salvation of human souls and while economic liberalism, or laissez faire, aimed at the temporal welfare of individuals, mercantilist statesmen and writers saw in the subjects of the state means to an end, and the end was the power of the state itself. The foremost exponent of this aspect of mercantilism was Colbert; but he had counterparts everywhere. The British navigation laws as well as the old colonial system were its most lasting results. Combined with a static view of economic life this doctrine was responsible for the perpetual commercial wars of the later seventeenth and the eighteenth century, culminating in Napoleon's Continental System and the British Orders in Council of 1807. For if power was the object of economic policy and if the total fund of economic power was given once for all, the only method of benefiting one's own country was to take something away from someone else. Nobody has pointed this out with greater logical incisiveness than Colbert; and, conversely, David Hume in his criticism of mercantilism turned against just this "jealousy of trade."

It soon becomes clear, however, that the characteristic features of this policy resulted less from the striving after power in itself than from the views of its exponents as to the proper means for attaining power or prosperity. Only at this point do we reach the real economic import of mercantilism, what constitutes it an economic tenet and what reveals the fundamental differences between mercantilists and their predecessors as well as their successors. Adam Smith, for example, was entirely in accord with mercantilist aims when he wrote that "defence is of much greater importance than opulence"; the only difference was that he laid much less stress than earlier writers upon that aspect of the problem. The extent to which mercantilists and laissez faire economists were in agreement with regard to ends is suggested by a comparison of the title of Adam Smith's famous work with that of the most important book belonging to German mercantilistic literature, the *Politischer Discurs von den eigentlichen Ursachen des Auf- und Abnehmens der Städt, Länder und Republicken*, by Johann Joachim Becher (Frankfort 1668, 2nd ed. 1673). Only slight shades of meaning distinguish this title from that of the bible of laissez faire. But in their view of the relations between means and ends two books could hardly be more unlike. There lies the most distinctive feature of mercantilism.

The mercantilist conception of what was to a country's advantage centered on two closely allied aspects of economic life—the supply of commodities and of money. These doctrines are best considered separately.

It was possible to regard commodities in a purely neutral way as something to be bought or sold and neither in preference. This was the merchant's point of view; as a German author (Laspeyres) has well said with regard to the Dutch: "The merchant was a free trader in every direction; he wanted no limitation of exports, in order to send out large quantities of goods; no obstacles to imports, in order to take in large quantities; finally no hampering of transit trade, in order both to import and export large quantities." This was what might be called the staple policy of the mediaeval towns, developed first in Italy and Germany, that of drawing trade in both directions to the town itself and away from all competitors. A late but important outcome of this was the old colonial system making the metropolis an *entrepôt* of colonial trade, an idea which culminated in the British Orders in Council of 1807. Important as this tendency was during many centuries of European history it could, however, never triumph completely as it appealed only to a small minority in every community. Instead two other and entirely opposing views came in succession to dominate commercial policy.

The prevalent mediaeval idea had been that a community should aim at the securing of plenty, as Francis Bacon pointed out in his *History of Henry VII* in saying that that monarch was "bowing the ancient policy of this estate from the consideration of plenty to the consideration of power." The result was the setting up of obstacles to exports and the facilitating of imports. Throughout the Middle Ages export prohibitions were innumerable in most countries, while import prohibitions were very scarce. Commercial treaties aimed at securing imports, exports being granted as a favor; in one case it was even required that goods manufactured from raw materials set free for export should be sent back.

It was in criticisms of the prevalence of export prohibitions that the new attitude which was to become typical of mercantilism first found utterance. In *A Discourse of the Common Weal of Thys Realm of England* (1581; ed. by E. Lammond, Cambridge, Eng. 1893), probably written in 1549 by John Hales, one of the most intelligent of mercantilist writers, it was shown at some length and quite clearly how the prevention of exports counteracts its own aim through hampering the production of the commodities in question, while free exports would result in increased production. Mercantilist thought here showed an advance over mediaeval ideas in its ability to take a long view and to disprove the belief that consumers profit by everything which creates momentary plenty. The same trend of thought appears in a well known sentence by Thomas Mun, in *England's Treasure by Forraign Trade* (reprinted Oxford 1928), written about the end of the 1620's and published posthumously in 1664. Referring to export of bullion he writes: "For if we only behold the actions of the husbandman in the seed-time, when he casteth away much good corn into the ground, we will rather accompt him a mad man than a husbandman; but when we consider his labours in the harvest, which is the end of his endeavours, we find the worth and plentiful encrease of his actions." This view of economic life reappeared in the nineteenth century in the teachings of Friedrich List as well as in the "infant industry argument" of John Stuart Mill.

But it did not in itself mean a changed attitude toward the supply of commodities. Mercantilists went much further, however, turning against "a dead stock called plenty," not only for the moment but for the long run period. They came to look upon a plentiful supply of commodities within a country with as great disfavor as mediaeval statesmen had regarded a depletion of commodities. The great object became to *décharger le royaume de ses marchandises*, stimulating exports and hampering imports by every conceivable means. Only thus was a country believed to become "rich"; Sir William Petty characteristically wrote in 1662, and Sir Josiah Child repeated a few years later, that Ireland, "exporting more than it imports, doth yet grow poorer to a paradox"—the opposite result was considered the only natural one. According to this view production must be stimulated to the utmost, but products kept out and sent away. The most difficult problem was the relative treatment of the different factors of production. A natural solution was to retain goods in accordance with their importance to production or with their character as raw materials; but these points of view were very largely discordant and a consistent policy was therefore impossible. On the other hand, it was possible to find a solution with regard to one of the prerequisites of production; namely, labor, as that was not "produced." The result was encouragement of population increase, of child labor and of low wages as a method of stimulating production and increasing the competing power of a country.

It goes without saying that the mercantilist treatment of the supply of commodities was not the outcome of theoretical speculation, although such speculation later developed. How far back the policy of hampering imports went it is difficult to say, but the first known traces of the new policy date from the beginning of the thirteenth century in the towns of north Italy, especially Venice. It passed to the Netherlands about the middle of the following century and to France and England a century later, Edward IV being perhaps the first English ruler wholeheartedly to embrace protection.

Mercantilism in the sense of a policy and doctrine of protection represents the most original contribution of the period in question to economic policy and the one which has retained more sway over men's minds than any other. Various causes contributed to this great change from mediaeval ideas; the most influential apparently was the growing importance of money economy. So long as commodities were mostly exchanged against one another, it was clear to the meanest capacities that nothing could be gained by receiving little in exchange for what you gave away but quite the reverse. When, however, all exchange transactions were overlaid by the cloak of money, the workings of economic life became infinitely more difficult to understand; and then it was easy to believe that commodities were a nuisance and a danger, especially as a cause of unemployment. Although this view was first held with regard to manufactures it spread over the whole economic field, in England coming from a comparatively early date to embrace even food products. As a money economy still survives, it is natural that the mercantilist view of commodities should also have survived when the rest of mercantilism lost its influence, although the ruthless consistency of laissez faire obliterated this too for a short time from men's minds.

So far no mention has been made of the mercantilist views of money. In the opinion of Adam Smith and his followers, however, the real gist of mercantilist doctrine was expressed in the statement "that wealth consists in money, or in gold and silver." From this point of view mercantilist insistence upon an excess of exports over imports—the flow of bullion and money omitted from consideration—was explained as inability to distinguish between money and wealth. It is easy to find in mercantilist literature and state papers an almost unlimited number of utterances supporting that interpretation. But the fact that in recent times the policy of protection has retained or regained its sway, although little is now heard about the necessity for an inflow of precious metals, indicates that protection is the more fundamental tenet. In the mercantilistic period, however, the two cooperated harmoniously.

The differences between an earlier and a later policy with regard to exports of money have led to the drawing of a distinction between bullionists (*q.v.*) and mercantilists proper. The former wanted to prohibit the outflow of bullion, while the latter brought forward a theory of the balance of trade and saw in an excess of exports over imports of commodities the only possible means of increasing the monetary stock of a country without mines of precious metals. The distinction was certainly important not only for economic policy but perhaps even more as an expression of a general concept of society; but it is also true that both schools were in agree-

ment as to the benefits of a large stock of money. Such a view is indeed very old; what mercantilism did was to bring the rest of economic policy into harmony with it and to elaborate many ingenious although usually mistaken theories to fortify it. The mercantilist theory of money was elaborated principally by a host of English writers in the seventeenth century, foremost among whom were Thomas Mun, Sir William Petty, Sir Josiah Child, John Locke and Charles Davenant; outside England there were few besides Bernardo Davanzati, Antonio Serra and Jean Bodin, the German writers contributing little of an original character in this field.

It is of course a travesty of the real opinion of these writers to say with Adam Smith that they identified wealth—an income—with money; but they very often expressed themselves as if they did so, and that also is of importance. Otherwise their reasoning is as a rule easy to follow, which does not mean that it is correct. Believing that consumption in itself was of no value they came by easy strides to the conclusion that only an excess of income over expenditure increased the riches of a country and that such an excess could consist only in an inflow of precious metals from abroad. Locke is perhaps more suggestive than any other writer on that point. From this followed naturally insistence upon an increased stock of money even by writers who could not explain to what use the money should be put or those who, like Petty, even believed in the possibility of a superabundance of money.

Most mercantilist writers and statesmen, however, insisted in the first place upon the use of money in circulation; this was in harmony with their general eagerness for trade and commerce, movement and exchange. Although the old ideal of cheapness, which was closely allied to that of plenty, held sway for a long time and perhaps never entirely lost its influence, most mercantilists were at heart inflationists. So far their eagerness for increased circulation was a foregone conclusion; for some form of the quantity theory of money was very widely held. One writer, Samuel Fortrey, found a happy expression for this aspect of mercantilism when he said in 1663: "It might be wished, nothing were cheap amongst us but onely money." This view paved the way for the plausible theories of John Law (1705) and for paper money mercantilism generally. That new departure was in strict accordance with the fundamental tenets of the school but unexpected in its results, since under a paper money regime the precious metals would lose their specific importance and much of the theoretical foundation of mercantilist commercial policy disappear. Belief in the benefits of a rapid circulation was strengthened by arguments to the effect that countries with low prices would have to "sell cheap and buy dear." In the hands of Law, who in this as in other respects could fall back upon Locke, this was elaborated into the doctrine that a plentiful supply of money within a country created a favorable rate of exchange. Almost the only writer showing a clear conception of the fact that rapid circulation by increasing prices became an obstacle to exports was Mun; but he did not follow out the conclusions, which would of course have been subversive of the whole body of mercantilist doctrine.

Lastly, mercantilism implied a general view of society, a fact which is often overlooked. This general attitude was closely akin to that of the successors of the mercantilists, the laissez faire philosophers, in almost all other respects their opposites. Both followed the general trend of modern opinion, replacing religious and moral considerations by belief in unalterable laws of social causation—a rationalism often accompanied by a strictly non-moral and non-humanitarian view of social life. The mercantilists were in agreement with laissez faire philosophers not only in basing their reasoning upon natural law; there are many likenesses as well as marked dissimilarities between the views of the two schools as to general social psychology, for example, between Petty and Hobbes on one side and Bentham on the other.

It is especially noticeable that mercantilist statesmen and writers believed in what was called "freedom of trade," or "free trade"; the utterances of Colbert to that effect are innumerable and in most cases quite seriously meant; sometimes it was even said that all interference with economic life should be avoided. How could mercantilists arrive at their practical measures from such premises? Certainly there is much inconsistency to be accounted for, but their fundamental view is quite clear. Unlike the laissez faire economists they did not base their advocacy of free trade and non-interference with economic life on the existence of a preestablished self-operating harmony. What they meant was that interference should aim at changing causes and not effects, that it was useless to punish unavoidable results without removing their causes. As a paradoxical but very typical mercantilist,

Bernard Mandeville, wrote in 1714: "Private vices, by the dextrous management of a skilful politician may be turned into public benefits." The contempt of the mercantilists for religion and ethics, their desire to subject individuals to the state, their belief in a somewhat mechanical social causation without belief in a preestablished harmony, made them even more ruthless in their insistence upon setting aside all sorts of time honored customs and human needs and presented a strong contrast to the fundamentally humanitarian attitudes which followed. Moreover in this respect as in most others the ability of mercantilist statesmen to achieve what was required by their programs was very limited; and their attempts at directing economic life without violence remained mostly on paper. In practise they had recourse to almost all the time honored methods of coercion.

Generally it may be said that mercantilism is of greater interest for what it attempted than for what it achieved. It certainly paved the way for its successors, and the discussions which went on throughout the seventeenth and the early eighteenth century eventually bore fruit, although chiefly through the criticisms they called forth. Great change in the society which mercantilist statesmen had taken over from the Middle Ages did not occur; that was reserved for their successors.

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See: CAMERALISM; BULLIONISTS; BALANCE OF TRADE; PROTECTION; COLONIAL SYSTEM; CHARTERED COMPANIES; COLONIES; ACTS OF TRADE, BRITISH; CONTINENTAL SYSTEM; GUILDS; LABOURERS, STATUTES OF; TRANSIT DUTIES; EXPORT DUTIES; MERCHANT MARINE; INTERNATIONAL TRADE; MONEY; NATIONAL WEALTH; ECONOMIC POLICY; NATIONALISM; UNIFICATION; NATIONAL ECONOMIC PLANNING.

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MERCENARY TROOPS. Professional soldiers, willing to undertake military service in exchange for payment in money, kind or land, were a common feature even of the earliest civilizations. Although there have been at all stages of history warlike overpopulated groups, such as the Greeks, the Celts, the Germans and at a later date the Swiss and the Bohemians, who have offered themselves as mercenaries in service abroad, it is the restless nomadic tribes of Asia and northern Africa which have contributed most significantly to the spread of a professional soldiery. Repeated invasions by wandering armies forced the early Asiatic and African centers of culture—unheroic civilizations disinclined to strenuous military service—to rely on trained military bands hired abroad. In China the caste armies of the ephemeral overlords were bolstered with a permanent body of mercenary troops. In Egypt the defense of the existing political and religious structure was entrusted primarily to the mercenaries rather than to the intermittently summoned militia. The successive empires in Mesopotamia relied on mercenaries supplemented by a feudal and popular army, while the mercenary troops of the Persian satraps counterbalanced the feudal army of the native kings.

The later evolution of the mercenary system has been determined in the main by three sets of forces. These forces were powerful enough to transplant the system even into Europe, which by reason of its comparative immunity from nomadic invasions as well as of the more intense

and popular character of its warfare was less congenial to military hirelings. The first of these determining forces was the political complexion of the state. While democratic forms and traditions have given rise as a rule to militias, absolutism has invariably tended to support itself by mercenary troops. The foreign guards of the pharaohs, the Germanic guards of the Roman emperors and the Swiss regiments in Bourbon France were varying manifestations of the same autocratic technique.

A second determining force has been the economic character of the state. Commercial cities like Tyre, Sidon, Syracuse, Tarentum and Carthage were drawn inevitably to the mercenary system. Carthage engrossed in commercial pursuits acquired wealth enough to purchase the military resources of Africa and half of Europe and to exploit them under the supervision of native Carthaginians. There arose powerful military dynasties, such as Mago and the Barcas, which transmitted prerogative and prestige from father to son. In the hands of men like Hannibal the mercenary system resulted in a military science of the highest order. Later commercial nations repeated the process: Venice, the German Hanseatic League and the commercial cities of Holland. The essentially mercenary character of the English army may similarly be attributed, in spite of a frequent overemphasis of the militia tradition, to the preoccupation of the nation with commercial pursuits.

A third determining force has been the presence of a cultural antipathy to military service accompanied by a general reluctance to jeopardize the advantages of civilized life by a recession to materialistic conflict. This spirit may manifest itself not only in periods of decadence and overrefinement but also at times of widespread spiritual or intellectual exaltation. The aversion to political aggressiveness and war has often been accentuated by the fact that the military program conflicts with the economic interests of the masses of the people in both rural and urban districts. Such periods of general popular indifference have as a rule tended to introduce a regime of mercenary troops.

The actual operation of these three forces has varied greatly according to the particular historical context. In Greece conditions conducive to the emergence of the mercenary system manifested themselves as early as the fifth century. In Sparta the economic resources of the agrarian population were exhausted by perpetual wars. The transition came about the time of the Peloponnesian War, and from the fourth century on mercenaries played an increasingly predominant role in the life of the city-state. As soon as Athens became an imperialistic commercial state it realized that a citizen militia was incapable of meeting the new demands and after the middle of the fifth century relied upon a permanent mercenary army. Since the confederate states had the option of paying their military obligations in money, large funds became available for recruiting purposes and facilitated the replacement of the citizen militia by paid troops. Other Greek city-states were for similar reasons driven in the same direction, and the process was accelerated by the growing reliance of the Greek tyrants on mercenaries. The mercenary units, recruited at first from native Greeks, were later manned with colonials and finally with barbarians and constituted eventually a far reaching system conducted by private entrepreneurs.

The same process began to repeat itself in Macedonia during the latter half of the fourth century. But as Alexander the Great extended his political ambitions to Asia and as the nation kingdom changed into a world autocracy, his citizen army was transformed not into a private mercenary enterprise, as was the case in southern Greece, but into a public machine directly under the control of the state, the forerunner of the standing army of the Diadochi. A similar development took place in Italy and in Rome during the third century B.C. Inasmuch as the Italic confederates assumed part of the military burdens, it was possible for the Romans to preserve a national army over a longer period than was the case in Greece. But the losses in men, the long duration of the Second Punic War, and the imperialistic policy brought about an acute form of cultural cleavage. Imperialism gradually transformed the national militia into a standing mercenary army. Only the heavy infantry of the legions was drawn from native conscripts, and even there levies were replaced under Marius by private recruiting. The civil wars and the empire completed the transition. In the standing mercenary army of Augustus Roman soldiers were completely replaced by aliens.

In the barter economy of late antiquity and the early Middle Ages remuneration of mercenaries was changed from payment in money to payment in kind, except in Byzantium, where the recruiting of soldiers became a flourishing business in the hands of private entrepreneurs. From the latter part of the eleventh century private mercenaries began to appear also in the

west. The displacement of the feudal soldiery was furthered by the crusades, by the spread of money economy and by the introduction of long range weapons; by the thirteenth century there had come into existence formally organized units, such as the mercenary troop of the French kings, the Brabançons of Barbarossa, the Saracens of Frederick II, the English mercenary knights and the privately organized bands of the *condottieri* in Italy. The end of the Middle Ages witnessed the appearance of the Swiss and of the German lansquenets, private foot mercenaries equipped with the new close range weapons which ushered in a new method of warfare more adapted to the needs of the modern state. The development was especially rapid in France, where the earliest standing mercenary troops were *bandes de Picardie* and the *compagnies d'ordonnance* organized on the Burgundian model. As the revolution spread to other states, the feudal military system gradually disappeared.

With the modern age a new mercenary period began. From the end of the fifteenth century to the end of the seventeenth military Europe relied almost exclusively on private mercenaries. Entrepreneurs like Pizarro, Cortés, Mansfeld and Wallenstein were commissioned by the state to organize temporary armies for colonial and domestic purposes. The exploits of the Swiss, the lansquenets, the German reiters, the Spanish infantry, the pikemen and the musketeers constitute the highest achievement of the mercenary system. The colonial wars of the seventeenth and eighteenth centuries, especially the wars in America, rendered mercenary armies more and more indispensable.

By the end of the seventeenth century European states had become sufficiently powerful to supervise directly the organization of their armies and to bring the mercenary troops under state control. Training and drilling began to go hand in hand. Temporary private mercenaries became transformed into the drilled standing armies of the absolute state. The house of Orange took the lead in effecting this transformation and paved the way for the Bourbon military system of the eighteenth century and the military reforms of Frederick the Great. The recruiting of hired troops from the native population was accompanied during this period by all the evils of corruption, deceit and violence. The more common practise of recruiting from alien populations was furthered by the mercantilist tendency to utilize natives for economic activities at home and by the fact that there were numerous small principalities which were eager to sell their mercenaries abroad. During the American War of Independence, for example, England found no difficulty in making such contracts with Brunswick, Hesse-Cassel, Waldeck-Ansbach and Zerbst, which together supplied the British army with 30,000 soldiers, in return for which they received about £8,000,000.

Besides the pure mercenary type there appeared certain mixed forms, such as the French militia system of Louis XIV and the Prussian cantonal system, which tried to incorporate militia features as well. These mixed systems led gradually to a nationalization of mercenary armies and enabled the nation states, which sprang up in the period following the French Revolution, to replace mercenaries by conscript citizen armies. After some initial setbacks universal military service succeeded during the last three decades of the nineteenth century in completely replacing mercenaries. In modern national armies the system of mercenaries has shrunk to the corps of commissioned and non-commissioned officers. Only countries with great external security, such as England and the United States, have found it possible to place their chief reliance on native mercenary armies, although mercenary troops recruited abroad are still useful for colonial purposes. Of late a greater professionalization of armies has become necessary because of the growth of technology and the increasing complexity of warfare. A professional soldiery designed for home defense seems again to prepare the road for a new national mercenary army.

The legal and political status of mercenaries has varied at different periods. Often mercenaries have formed separate independent bodies which either acquired the status of alien units in the national life, as was the case with private mercenaries, or became integral parts of the state, as happened with national standing armies. Groups such as the Mamelukes and the Janizaries were castelike organizations with special privileges and responsibilities, which in many cases descended from generation to generation. All matters pertaining to salaries, maintenance and discipline were minutely regulated by a complicated administrative apparatus. In Rome the independent administrative process was exemplified by the organization of the praetorians and later by that of the various military units of the Germanic invaders; in the Middle Ages by the Norman mercenaries who were employed in the service of Russia and Byzantium and by

Saracen troops, which were more than once hired by Christian rulers. A peculiar type of organization was exhibited by the Almovars, who were active in Italy and in the East at the end of the thirteenth century. The Italian *condottieri* created the so-called *compagnie di ventura*, specially privileged units which played an active role in the establishment and administration of the mediaeval city-states of Italy. In France there arose during the early Middle Ages such self-sufficient private organizations as the Grande Compagnie, the Société de l'Aqueste and later the savage *cameraderies* or the Armagnacs.

The Swiss organizations represent a particularly important variant of the administrative machinery. For economic reasons the state itself assumed in Switzerland the task of providing its citizens with military employment abroad. The right to recruit became a state monopoly. The various cantons made contracts with foreign states regulating the recruiting and delivery of troops. The units were organized on a local basis; each had its own constitution, officers and banners. Contracts were concluded with Austria, Burgundia, Milan, Venice, the Holy See, Spain, Savoy, Württemberg, Holland and above all with France, where most of the Swiss mercenary bands were hired. It was only in 1848 that a federal law was adopted forbidding the cantons to enter into such military agreements.

The Swiss units served as a model for the famous German mercenary organizations, the so-called lansquenets (*Landsknechte*), which originated in upper Germany under the direction of the emperor Maximilian I. The lansquenets were associations composed of foot soldiers recruited both from noblemen and from townspeople and peasants. The task of recruiting was assigned by a war lord to a colonel; the colonel engaged his lieutenant colonel and captains, who decided upon ensigns and opened recruiting. Their statutes were strictly regulated. The muster was followed by a recitation of the military articles, an administration of oaths and an installation of the officers who had been elected by vote of the rank and file. In democratic as well as in more authoritarian administrative systems the maintenance of discipline among the wandering mercenaries was one of the most difficult problems and often led to serious mutinies. Italy and France as well as Carthage and Rome at an earlier period were repeatedly menaced by mercenary wars and from time to time in periods of weak central government overrun by greedy mercenary bands.

The progress of military art in ancient and modern times may be attributed in large part to the mercenary system. It determined the nature of strategic warfare and stimulated technical and tactical innovations, giving to war an independent status and a capacity for development. The creation of the empires of the ancient world could have been achieved only through mercenaries, who became formidable instruments of destructive strategy. In Europe likewise it was only through mercenaries that the limited scope of the mediaeval wars was overcome. The private mercenary armies of modern Europe proved excellently adapted to the new tactics of exhaustion. They made war an economic enterprise and a source of gain. To support war by war became a principle. War remained an economic enterprise even at the time when mercenaries became state armies. The highly trained armies of the mercenary period were difficult to replace—a consideration which dictated to a considerable degree the strategy and tactics of warfare.

Public opinion in nearly all periods has shown itself hostile to the mercenary. In Greece the *miles gloriosus* was an object of bitter ridicule. In the last years of Rome mercenaries were branded like horses. The social position of the non-knightly soldiers was very low also in the Middle Ages. Frederick Barbarossa and Louis VII made an agreement not to tolerate such rabble anywhere in their dominions, and the third Lateran Council promulgated the heaviest church penalties for mercenaries as well as for Christians in general who declined to combat the mercenary evil. The disappearance of private mercenaries after the horrors of the Thirty Years' War and the wars of Louis XIV was a significant reflection of public opinion. But as the servile soldiers of the state mercenary armies became an organic part of the state organization, they became with the growth of humanitarianism objects of paternalistic government.

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See: ARMY; WAR; WARFARE; CONSCRIPTION; MILITIA; MILITARY TRAINING; MILITARISM; PRAETORIANISM; MILITARY DESERTION.

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MERCHANT MARINE. The close association of shipping interests and government policy may be traced back to the period when mercantile and carrying functions were but parts of one general operation and were controlled by the same commercial interest. Ancient and mediaeval traders who engaged extensively in oversea commerce usually owned the vessels which carried their goods. While they often transported for others they employed their vessels primarily in their own trade. The ownership of merchant vessels was thus looked upon as an inevitable accompaniment of any considerable water borne commerce. Furthermore in cities like Venice and Genoa and in the towns of the Hanseatic League vessels engaged in oversea trade were an important part of the community's capital, and as such their increase and protection were vital objects of state policy.

The spirit of nationalism which spread over Europe during the sixteenth, seventeenth and eighteenth centuries was characterized by a broader and more inclusive trade policy than had prevailed in the smaller maritime city-states of ancient and mediaeval times. This policy, known on its economic side as mercantilism, was shaped to meet the real or supposed needs of a nation's industries. Shipping was one of several industries requiring the fostering care of national authority. The theory that national wealth is increased by promoting exports and limiting imports had as a corollary the principle that goods imported into a country or exported therefrom should go as far as possible in vessels flying the national flag. The Navigation Act of 1651, passed under Cromwell, provided among other things that all products "of the growth, production, or manufacture of Asia, Africa, or America, or any part thereof . . . as well as of English plantation as others" should be imported into England or its territories only in British built and British manned vessels. As late as 1847 no produce of Asia, Africa or America could be imported for consumption into the United Kingdom by way of continental Europe, the purpose being to make such trade direct and to confine it to British bottoms. The coasting trade of the United Kingdom was also restricted to British ships, and the colonial trade was prohibited to all foreign vessels except under sanction of special orders in council.

The navigation acts of Great Britain as well as similar regulatory measures passed in other maritime countries show the persistence of the idea that a merchant marine is vital to national commercial interests. The spirit of laissez faire, however, which spread over Europe during the first half of the nineteenth century was gradually undermining not only tariff barriers but also old shipping laws. An act passed in 1849 repealed the British navigation laws subject to certain reservations. In 1854 a law was passed admitting foreign vessels to the coasting trade of the United Kingdom. Nevertheless, English law still provides that a ship shall not be deemed a British ship unless owned wholly by British subjects or by an incorporated body established in some part of the British dominions. According to the Alien Restriction (Amendment) Act passed in 1919 no alien may act as master or as one of the principal officers of a British ship.

While mercantilistic ideas still survive, other motives have played a larger role in modern national policy for the building up of merchant shipping. Naval needs prompted governmental encouragement of merchant shipping as a means for supplying transports and auxiliary cruisers in time of war and as a training school for seamen in time of peace. Subsidies were often conditioned upon the operation of vessels built according to naval specifications or approved by naval authority. This association of ocean transportation and naval needs became especially marked as leading nations acquired oversea possessions or established "spheres of influence" in the Orient, Africa and other relatively remote regions. The growth of capitalist imperialism during the last half century has also called for the development of national shipping. This imperialism while sometimes showing itself in military conquest, as in the Spanish-American and Boer wars, has been the outcome primarily of an industrial technique demanding extensive markets and new sources of raw material. The development of trade lines along ocean routes to remote markets and sources of needed raw materials has become in several instances under eco-

nomic pressure a matter of governmental concern. Where such outlying regions have become colonial possessions, the establishment of regular and frequent communication generally becomes a matter of political policy.

Among other aims which have figured prominently in modern governmental aids to shipping has been the effort to provide an adequate and speedy mail service to and from foreign countries. This effort while often partly political and imperialistic in nature is also a matter of social convenience and service. The promotion of a general oversea trade is also one of the ends sought in shipping subsidies. It is a prevalent impression among business men and politicians that the national flag on a ship advertises a country and its products and that therefore commerce may be promoted by aiding national shipping. Countries, like Great Britain, dependent upon foreign lands and oversea possessions for food supplies and other materials, have a vital interest in the maintenance of a national merchant marine which can be relied upon to keep the lanes of traffic and communication open for their goods.

The forms adopted by modern governments to aid national shipping have undergone material changes. Prohibitions against the transportation of imported or exported goods in foreign bottoms have long since disappeared. Through various reciprocal treaties discriminatory import duties favoring products carried in national vessels and discriminations in tonnage dues have practically ceased to exist. Attempts to revive such discriminatory practises in France in 1872 and 1873 and in the United States in the Merchant Marine Act of 1920 were failures. While England and some other countries have opened their coastwise trade to foreign vessels, the United States and most maritime nations of continental Europe reserve their inland or coastwise commerce to their own ships. Aside from the policy of reserving coastwise trade to national vessels governmental aid now usually takes the forms of periodical money payments, exemptions from import duties on shipbuilding materials, construction and navigation loans to shipbuilders and operators and sales of government built ships at nominal prices. Although the last two forms have figured prominently since the World War, the first is the most important. Periodical money payments to shipbuilders and operators have been in the nature of subsidies or subventions.

Where a government makes payment to a shipping concern conditional upon the regular performance of some public function, such as carrying the mail between specified ports at a given rate of speed, the payment is usually known as a subvention. Most subventions at the present time are mail, although some are admiralty, naval and intercolonial. Where a government subsidizes national shipbuilding and ship operation in general, subject only to the meeting of certain broad requirements, the payments are known as construction and navigation bounties. Shipping and shipbuilding bounties have become less prevalent since the close of the World War, a period in which economic conditions have made it difficult for the shipping industry to finance its own development. During the struggle great material losses of tonnage had been suffered. In attempting to reestablish normal trade relations the industry faced at the same time a deficiency in vessel tonnage and an increasing demand for fast service. As a result the rapidity of development of line service has been disproportionate to the private capital available, and in consequence there has been much dependence upon government credit or government loans. The United States, France, Italy, Sweden, Japan, Spain and other countries have officially adopted maritime credit schemes.

Mail subventions have become the typical form of government aid to shipping to which the term subsidy is applied. Where such payments cover only the extra costs involved in the services demanded by the government they are properly termed subventions. Frequently, however, they cover more and are therefore subsidies in the true sense of the word. Governments sometimes contract to pay carriers regardless of their nationality for special transportation services: such payments are of course in no real sense a subsidy to a home or national industry. Among maritime countries, however, a ship subsidy or subvention is generally designed to aid a national form of transportation as well as to secure certain desired services and is therefore limited to carriers flying the national flag.

Shipping subsidies are ordinarily intended to perform for the national mercantile marine the function performed by a protective tariff for other industries whose products meet more or less foreign competition. As the protective tariff is designed to enable domestic producers to compete successfully with their foreign rivals in the home market, so shipping subsidies are granted to improve the competitive position of water carriers flying the national flag on the high seas.

The purpose is to keep at least a part of the world's shipping industry at home; that is, under the national flag.

The effectiveness of shipping subsidies may be considered from two standpoints: the development of special and needed services and the building up of a national merchant marine. Governments are often constrained to offer inducements to steamship companies in order to secure a transportation service otherwise unobtainable. For example, payments for the regular carriage of mail over a given route at a certain average minimum rate of speed and with a given number of sailings per year may be sufficent to obtain the service desired, and there is no reason to question the effectiveness of such payments in most instances. With regard to the promotion of a national merchant marine the effectiveness of direct financial aid is more debatable. Where a subsidy takes the form of a subvention or subsidy to a special company, it is questionable whether other steamship concerns whose vessels fly the same flag are indirectly benefited, as has been contended by some authorities. Steamship lines which have grown up in the wake of some subsidized line have developed because trade conditions have favored their growth and not because a government aided service paved the way. The subsidies granted by the British government to the Cunard Line, for example, were not an indirect cause of the early development of the White Star Line, which for a long time received no government aid. In pre-war Germany the North German Lloyd, which received a moderate subvention from the imperial government for certain services, was outstripped by the Hamburg-American Line, which received no such aid. Furthermore the countries which adopted the policy of paying general bounties often show a relatively limited development of mercantile shipping. In pre-war times the German merchant marine, which received little direct aid from the government, far outstripped the heavily subsidized shipping of France, as did also the Norwegian mercantile fleet, which received practically no financial assistance from the government aside from certain subventions granted to the coastal service. In other words, a country's merchant marine depends fundamentally on industrial and commercial conditions.

The fleets of Great Britain, the United States, Japan, Germany, Norway, France, Italy and Holland constitute about 80 percent of the world's total tonnage. Sweden, Greece, Spain and Denmark also have large merchant fleets.

England pays regular shipping subsidies, as do most of the other maritime countries. Direct bounties were granted for short periods in the reigns of Elizabeth, James I and some later sovereigns. These early bounties as well as certain other financial aids had naval ends in view and were for the most part spasmodic rather than regular in character. In the nineteenth century the policy of aiding the British merchant marine on the high seas assumed the forms of mail and admiralty subsidies, one of the first of which was a postal subvention to the Peninsular Company (later the Peninsular and Oriental Company) in 1837. In 1838–39 postal subventions were granted to Samuel Cunard by the Board of Admiralty for the transportation of British mail between Liverpool and certain North American ports. The transatlantic services of the Cunard Company were gradually enlarged, accompanying increases in the subsidies paid by the government.

The British government has continued the policy of granting direct financial aid to merchant shipping, but this aid has been conditioned upon the performance of some public service and has been limited to a small number of companies with whom special contracts have been made. While these payments have assumed the form of subventions, they were often actually subsidies in their earlier developments. Later monetary grants, however, have been little if any more than necessary to cover the cost of the service rendered and have consisted almost entirely of postal, admiralty and colonial subventions. For the year 1930–31 the budget estimates for the mail contract services of the British government amounted to £820,570 ($3,993,300).

During the World War British shipping suffered a direct war loss of 7,759,000 gross tons, or 38 percent of the tonnage under the British flag in June, 1914. As a result of a construction program to make good this loss the British government acquired a considerable fleet. It soon disposed of its ships, however, and left to private enterprise the task of further repairing the damages wrought by war. The British government and the government of Northern Ireland under the Trade Facilities Acts passed between 1921 and 1926 guarantee loans to shipping and shipbuilding concerns. Under these laws loans approximating £85,707,000 ($417,093,115) have been guaranteed by the government.

Trade conditions have favored British shipping. The postal and other subventions as well as the recent governmental guaranties just men-

tioned affect but a small part of the British merchant marine. The position of Great Britain among the maritime countries of the world is due primarily to economic causes, not to any governmental policy of a protective nature.

Several of the British dominions also subsidize their merchant fleets. The Australian government pays mail subsidies partly on a fixed payment basis, partly by weight. The Navigation Act of 1912 as amended in 1920 confines the coastal trade to ships which meet strict governmental regulations. The Canadian government encourages shipping by subsidy and otherwise as part of a general national transportation system, which includes also the railroads. About 68 percent of the power driven fleet exclusive of the Great Lakes fleet is owned directly or controlled by the two great railroad groups, the privately owned Canadian Pacific and the publicly owned Canadian National Railways. The Canadian coastal trade is confined to Canadian or British ships. Postal subsidies and navigation bounties appropriated by the government amounted in 1932 to $1,052,220. The government of New Zealand has paid postal subventions since 1869. Exemption from port dues is also used to aid shipping. There are no restrictions on the coastal trade except that ships so engaged must fulfil the requirements of the New Zealand Shipping and Seaman Act of 1908.

From colonial times to the Civil War, barring occasional setbacks, the American merchant marine played a prominent role in international trade. Shipbuilding and ship operating costs were low, largely because of the abundance of standing timber near the seacoast, the skill of American seamen and general trade conditions. After the Civil War the country's shipping entered a period of decline, particularly in its registered tonnage (the tonnage engaged in foreign commerce). In 1910 notwithstanding a great expansion of foreign trade the registered shipping was less than one third of what it had been fifty years earlier. Sailing ships were being rapidly replaced by steamships on ocean routes during the middle and latter parts of the nineteenth century. Coal, the fuel used in generating this steam power, was until late in the century more expensive at American coastal points than in England and some other parts of Europe. During the same period the displacement of wood by iron and later steel in ship construction also made for relatively higher building costs in the United States.

On the other hand, the exploitation of mineral and other natural resources furnished a more lucrative field for American and foreign capital. As these resources were extensive and their exploitation was generally safeguarded by a high tariff, capital found in these fields much more profitable employment than in shipping. This diversion of American capital from maritime ventures to interior industrial activities altered the nature of the country's commerce. In international trade the United States became to an increasing extent a large exporter of commodities and similarly a greater importer of ocean transportation service.

During the years 1864 to 1877 and again after 1891 postal subsidies were paid to certain lines handling American mail destined for foreign ports. The granting of these subsidies during the first period was the result of the influence of shipowners and ship operators, who were beginning to feel the effects of changing conditions of navigation; their discontinuance was due to scandals arising out of the revelation of corrupt influences brought to bear upon Congress during the negotiations for one of the contracts with the Pacific Mail. The decline of American shipping on the high seas, however, coupled with a rapidly expanding foreign commerce attracted the attention of business men and political leaders. Agitation for governmental aid to this industry resulted in the act of 1891, which likewise had little effect in keeping any considerable number of American ships on the high seas. The reservation of the coastwise or inland trade to vessels flying the flag of the United States, however, was a potent influence in the growth of the country's enrolled tonnage (tonnage engaged in domestic trade).

The World War brought about a change both in the status of the United States as a maritime country and in governmental shipping policy. In 1914 the registered shipping of the country was slightly over 1,000,000 gross tons. By 1921 it had increased to over 11,000,000 gross tons, or more than 4,000,000 tons in excess of the enrolled tonnage. Since 1921 there has been a substantial decline in that part of the American merchant marine which is engaged in foreign trade. Even so it considerably exceeds the mercantile fleet of any other nation except Great Britain.

An important factor in the recent growth of the American merchant marine was the program of construction adopted by the United States upon its entry into the World War. As a result of this program and the addition of German vessels turned over to the United States the govern-

ment was by July, 1921, in possession of a mercantile fleet of 7,993,000 gross tons. Since the greater part of this fleet had been built to meet a world emergency, many of the vessels were poorly constructed and would have become unseaworthy after a few years' service; they were also built during a period of high costs. Within a year after the spring of 1920, when these costs had reached their peak, the selling values of ordinary freight steamers had declined about 70 percent. The United States government as a result of wartime building found itself in possession of the largest merchant fleet that had ever been directly owned by any government. The United States Shipping Board through the instrumentality of a subsidiary organization known as the Merchant Fleet Corporation organized the greater part of the fleet into several lines which have been operated under contract by various steamship companies. The United States Lines, which included the seized German vessels, were operated directly by the Merchant Fleet Corporation. It became a declared policy of the government to dispose of this fleet by sale as rapidly as possible. Partly because of the reduced prices of merchant vessels and partly in order to encourage private operation under the American flag vessels were sold much below their cost of construction. In 1929 the United States Lines and the American Merchant Lines were sold to Paul W. Chapman and Company for $16,300,000, a price which according to some marine authorities was greatly below their true value. The *Leviathan* (*Vaterland*) alone is reputed to have been built at a pre-war cost of $12,000,000. From 1925 to 1930 the United States Shipping Board sold to ten lines, for something less than $23,000,000, 104 ships whose cost of construction had been $258,000,000; that is to say, the sale price to the private owners represented 9 percent of the cost of construction to the government. On June 1, 1932, there still remained in the control of the board 364 merchant vessels with a gross tonnage of 2,099,438.

Post-war policy is indicated by the acts of 1916, 1920 and 1928 and by the provisions of several acts creating the construction loan fund. The act of 1916 provided for the organization of a Shipping Board, which was authorized to investigate complaints against the laws and practises of foreign governments operating in such a way as to be unfair to vessel owners of the United States. The Merchant Marine Act of 1920 gave the Shipping Board comprehensive grants of power with respect to the acquisition and operation of ships and the regulation of all the commercial shipping of the country. The Merchant Marine Act of 1928 authorized the postmaster general to enter into negotiation with shipping lines engaged in the foreign trade for the carriage of oversea mail at rates and under conditions prescribed in the act. The mail subventions paid by the United States government under this act for the fiscal year ending June 30, 1930, amounted to $13,066,441, and it is estimated that for the fiscal year 1938 they will be $30,804,386.

A construction loan fund limited to $25,000,000 was authorized under the Merchant Marine Act of 1920; this limit was greatly increased under subsequent laws and in 1928 was extended to $250,000,000. Loans under these laws amounted to $145,131,165 up to June 30, 1931.

American policy since the World War has been vigorous in its efforts to maintain the position gained in that struggle. Governmental encouragement has taken the forms of postal subventions, sales of government vessels at nominal costs, construction loans and continued reservation of the coastwise trade to American vessels. Notwithstanding these aids there has been a marked decline in the registered tonnage since 1922. Unlike the collapse following the Civil War, this decline has not been assisted by high material and fuel costs: bunker coal, fuel oil and steel are at least as cheap at the leading Atlantic ports of the United States as in any part of the world. While it is true that labor costs in both ship construction and operation are relatively high, this factor is probably not so serious an obstacle to the development of a large American marine as many writers maintain. The principal factors operating against the growth of American shipping on the high seas are primarily commercial in nature. Over many important ocean routes between the United States and foreign countries the differences in freight tonnages between outgoing and incoming traffic are marked. These differences are to some extent at least accentuated by the country's high protective tariff system. More important still is the general nature of the country's foreign trade balances. Among the most important items entering into international trade balances are exports and imports of merchandise, investments of capital across national boundary lines and returns thereon and the transportation of freight on the high seas. With respect to the first, the United States has had for several decades a large excess

of exports over imports; and government policy through its encouragement of export trade and the continuance of high tariff barriers has been favorable toward the maintenance of this excess. With regard to the second, during and since the World War the country has exported large amounts of capital and is now a creditor nation. In the case of transportation service on the high seas, the United States has been since the Civil War an importer rather than an exporter. Notwithstanding the importance of certain other items in the international balance sheet it seems unlikely that the policy of making shipping on the high seas a dominant industry will succeed without reducing the importance of other items in foreign trade. Commerce is a process of exchange; and in the long run large export items must be balanced with large import items.

The experience of the French in dealing with national shipping is more complete than that of any other people. Of peculiar interest is the pre-war bounty system, which was later adopted with modifications by some other European countries and by Japan. A law passed in 1881 provided for both construction and navigation bounties. The latter were allowed to owners of vessels built in France in accordance with the number of sea miles traveled in the course of a year, net tonnage and age of vessel and material of construction. Important changes in this law were made by the acts of 1893, 1902 and 1906. The bounty system seems to have had little influence on the growth of the national merchant marine. After the outbreak of the World War it was gradually abandoned; the last payments in the form of construction bounties were made in 1920 and navigation bounties ended with the appropriation of 100,000 francs ($3920) in 1930–31. Like Great Britain and the United States, France has made large annual appropriations for contract mail services. In the fiscal year 1931–32 budget estimates placed them at 196,-145,000 francs ($7,688,884). The principles which govern this form of compensation are similar to those which obtain in other maritime countries.

A post-war development of considerable magnitude has been that of French maritime credit. In 1928 the French parliament adopted a comprehensive maritime credit law which was amended in 1929 and 1931. Loans to shipowners are effected through the Crédit Foncier or directly from some other lender or by issue of bonds. If the ship for which a loan has been incurred is constructed at home, half of the interest charge is borne by the government; if constructed or purchased abroad, only 1.3 percent is assumed by the government.

The coasting trade of France is reserved to French vessels. This reservation, however, does not apply to trade between France and her oversea possessions except in the cases of Algeria, Tunis and Morocco. Railway rates to the coast are reduced in the case of exported goods carried in French vessels.

The pre-war expansion of German shipping was the result of economic influences which were partly responsible for the industrial development following the establishment of the empire in 1871. Down to the outbreak of the World War the imperial government did not directly expend public funds in aid of shipping except in the case of a few postal subvention contracts of limited duration and scope. Indirect aid, however, was afforded in various ways. Mail subventions were extended in pre-war times to lines serving what was then German East Africa and to others operating in the Far East and in Australia. The most important were those granted the North German Lloyd and the German East Africa Line. The only shipping service subsidy known to have been given in Germany since the war is local in character: it was granted to a line connecting the free city of Lübeck with certain Baltic ports.

One of the greatest agencies of artificial aid to German shipping in the pre-war period was state owned railways. While any action on the part of the government in lowering rates or entering into special agreements over specified routes was always based on the necessity of assisting German foreign trade, the national merchant marine indirectly profited by becoming the extension of the delivery system. Under the Versailles Treaty this aid to German shipping has been greatly weakened.

After the war the German government laid plans for the rehabilitation of its shipping, 85 percent of which had been turned over to the Allies or sunk. In 1921 there was provided at the request of German shipowners and through appropriations by the government a reconstruction fund for the replacements of the lost fleets. In 1925 the government authorized a loan fund of 50,000,000 marks ($11,900,000) to be made available for new construction under certain conditions. Much American capital also flowed into Germany to be used in rehabilitating its shipping. Since 1921 the German merchant marine has exhibited a phenomenal growth.

While this has undoubtedly been facilitated by the post-war aids, economic factors have been its fundamental causes just as they were the chief influences in pre-war increases.

Among maritime countries Japan ranks third in vessel tonnage. As a result of the war with China in 1894, previous to which Japanese shipping was less than 300,000 gross tons, interest in ocean transportation was stimulated. In 1896 a law was passed granting general navigation bounties to steel and iron ships owned exclusively by Japanese subjects and plying between Japan and foreign ports. An act providing for construction bounties was also passed. Prior to 1896 Japanese shipping had also been aided by mail subventions. Under a revision of the postal service law in 1896 these yearly subsidies were greatly increased. In 1909 the law combined the two types of navigation aid provided for in the acts of 1896.

Japan after the World War made increasing provision for the maintenance and development of a national merchant marine. The construction bounty law was repealed in 1917. General navigation bounties have been continued and postal subventions have been increased. The total budget estimates for these subventions and bounties for the fiscal year 1929 30 were 10,823,924 yen ($5,102,398). As in other commercial countries maritime credit has been greatly extended since the war. Public credit is given through selected banks. The relationship of the government to this maritime credit appears in appropriations of an interest subsidy to the banks making loans to shipping concerns.

The unique feature of post-war policy in Italy is the system of navigation bounties put into effect in 1926. Privately owned navigation lines are divided into "indispensable" and "useful" lines: the former are those connecting the peninsula with the islands and colonies of Italy; the latter those furnishing transportation between Italy and important foreign commercial centers. The indispensable lines receive a fiscal subsidy covering a period of twenty years; the useful lines a grant lasting five or ten years with diminishing annual payments. The subsidized lines are required to renew their ships to meet present day needs. In addition to these contract bounties provision is made for construction bounties. Under the reorganized system of 1926 the authorized subsidies and bounties are very large. For the fiscal year 1932–33 the total authorization for the contract service amounts to 269,485,000 lire ($14,174,915). For the same year the authorized construction bounties aggregate 62,000,000 lire.

Norway, which ranked fifth among the maritime nations of the world in 1931, has evolved a shipping policy out of a geographical situation. The country has an extraordinarily long coast line with numerous inlets (fiords), and two thirds of the population live near the seacoast. Communication is dependent upon ships, and the government therefore undertakes to absorb deficits caused in the maintenance by private companies of regular transportation services. Postal subventions are paid carriers in the foreign service along three routes, of which the most important is that between Bergen and Newcastle. In 1929–30 the contribution to this service amounted to 250,000 kroner ($67,000). The budget estimates for the same year covering all state contributions to private shipping amounted to 5,865,000 kroner ($1,567,000). No laws restrict the coasting trade to ships of Norwegian registry. A mutual treaty between Sweden and Norway dating from 1905 reserves the coastwise trade of each, as between themselves, to national vessels.

The development of shipping in the Netherlands has not required any material governmental aid, although various artificial incentives have been used to promote the industry in the past. Up to 1872 lower tariff duties were imposed upon products moving between the Netherlands and its East India possessions, but this differential is now entirely abolished. Before 1912 the coastal trade within the archipelago was closed to vessels of foreign nationalities, but this trade is now open to all vessels under limited restrictions. The need for regular and frequent steamship service between the Netherlands and its East India colonies has resulted in the establishment of this service by Dutch vessels through contracts by which the government assumes certain financial responsibilities. The amounts paid out by the government for the maintenance of these services is relatively small. In 1928 the total monetary aid given the shipping industry was about 196,000 florins ($79,000).

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See: SHIPPING; SHIPBUILDING; SEAMEN; MERCANTILISM; ACTS OF TRADE, BRITISH; SUBSIDIES; NATIONAL DEFENSE; NAVY; ARMED MERCHANTMEN; MERCHANTMEN, STATUS OF; WAR ECONOMICS; INTERNATIONAL TRADE; PORTS AND HARBORS; WATERWAYS, INLAND.

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MERCHANTMEN, STATUS OF. A merchantman as distinguished from a warship or a public vessel, as the term is here used, may be said to include vessels irrespective of ownership, size or motive power which are engaged in non-governmental and ordinary commercial activity, such as carriage of persons and goods for hire. Although they are inanimate things vessels are in some respects, in legal contemplation, assimilated to persons, so that a status is attributed to them. In consequence of this personification vessels are objects of international law and of public and private maritime law.

In international law the status of merchantmen is determined primarily by their nationality. The nationality of the vessel is evidenced by the flag the ship is entitled to fly. The right to fly the flag is in turn determined by the vessel's registration. The conditions under which a vessel will be admitted to registration in a particular country may generally be determined by national law. Some states, for example, the United States, Great Britain and Germany, require that the vessel should be wholly owned by nationals or by domestic corporations having their principal place of business within the state; others, like France, require only that it must be partly so owned. In some instances the vessel must be constructed within the country; in the United States except as to vessels engaged in coastwise trade this condition was removed with the passage of the Panama Canal Act in 1912. In other states admission to registration is conditioned upon the manning of the vessel by nationals to the extent of a fixed proportion of officers and crew. In France, for instance, all the officers and three fourths of the crew of a ship flying the French flag must be French nationals (Law of September 21, 1793, modified, however, as to vessels of small tonnage by the Law of April 7, 1902).

It should be noted that the flag, which in the case of warships is conclusive, and the certificate of registration are, in the case of merchantmen, merely *prima facie* evidence of nationality. If the issue of fraudulent registration is raised, the flag and the documents presumably supporting the vessel's right to fly such a flag do not of themselves overcome the evidence of fraud. Controversies relating to fraudulent registry are frequent both in time of peace (e.g. with respect to smuggling vessels) and in time of war (e.g. with respect to claims of neutral status).

International law recognizes that the merchantman is entitled to the protection and is subject to the jurisdiction of the state whose flag it flies. The extent of this protection and jurisdiction varies according to whether the vessel is on the high seas or within the territorial waters or ports of another sovereignty. The incidents of the vessel's status as evidenced by its nationality are not the same in war time as in peace time. Finally, the nature of its ownership —whether it be privately or government owned —has certain consequences.

As the high seas are not subject to the jurisdiction of any state, no nation can attempt to exercise authority thereon over the vessels of another state. By virtue of this principle of the freedom of the seas a state has exclusive jurisdiction over its vessels on the high seas, limited only by generally accepted principles of international law or by treaty. To explain the exclusive jurisdiction which a state in fact exercises beyond its territory the fiction of the territoriality of vessels has been invented, by which a vessel has been regarded as a floating portion of the flag state's territory. This fiction, however, has been sharply criticized as unnecessary and has now been repudiated by the majority of courts and writers. The exclusive jurisdiction of the flag state over acts and transactions occurring aboard the vessel while on the high seas has important consequences. The validity of contracts concluded and of marriages solemnized on such a vessel is governed by the law of the flag state. Tortious acts or crimes committed on such a vessel are punishable by its laws irrespective of whether the act is committed by passengers or by members of the crew. Children born on board a ship may be deemed to have

acquired the nationality of the flag state *jure soli*.

In a strictly defined category of cases the exclusive jurisdiction of the flag state over its merchantmen on the high seas is limited, and a concurrent jurisdiction is conceded to other states. International law permits the apprehension by any nation of vessels guilty of acts of piracy. A state may also exercise acts of authority over a foreign vessel on the high seas in self-defense, as in case of suspicion that the vessel is engaged in an enterprise endangering the safety of the particular state (see the case of the *Virginius* in Moore's *Digest of International Law*, vol. ii, p. 895, 980). Finally, customary international law concedes a right of interference on the high seas in case of hot pursuit begun in the territorial waters of a state in order to punish a violation of its municipal laws. The question whether the flag state has exclusive jurisdiction over acts which are committed on board ship but the effects of which take place outside the vessel was decided in 1927 in the negative by the Permanent Court of International Justice in the celebrated case of the steamship *Lotus*. The flag state's exclusive jurisdiction may of course also be impaired by virtue of treaties. In the interest of prevention and suppression of the slave trade the visit and search of merchantmen has been permitted in case of suspicion (see the General Act of the Brussels Conference of July 2, 1890, in *British and Foreign State Papers*, vol. lxxxii, 1889–90, p. 55–81). The dispute over the policing of fisheries led to the Bering Sea Fisheries Arbitration and to several international conventions aiming at the protection of the riches of the seas, as a result of which merchantmen are subject to interference by states other than the flag state.

When a merchantman passes through or enters the territorial waters or ports of another state, the flag state's jurisdiction is limited to a greater or less extent by the concurrent jurisdiction of the local sovereign. There is, however, an important although frequently ignored distinction if such passage is only transitory. International law recognizes the right of innocent passage of merchantmen; i.e. the right to pass freely through territorial waters without interference by the local sovereign. The right of innocent passage is a compromise between the principle of the freedom of the seas and the principle of the littoral state's exclusive jurisdiction over its territorial waters. Nevertheless, even ships in innocent passage are expected to comply with reasonable rules of the local sovereign relating to the safety of navigation and the policing of the seas.

Merchantmen passing through territorial waters bound for port and vessels in port are as a matter of principle fully subject to the jurisdiction of the littoral state. No immunity whatever may be claimed for any such vessel under international law except in case of distress. As a matter of practise, however, the local sovereign will usually decline to take jurisdiction over matters pertaining exclusively to the internal order and discipline of the vessel. By well established international custom jurisdiction in such matters is retained by the flag state, whose consul is empowered by virtue of treaty provisions to exercise such jurisdiction.

As to all other matters, such as crimes or torts committed aboard ship and involving strangers to the crew, the local sovereign has a perfect right to take jurisdiction, although such interference is usually declined unless the act is likely to affect public order and peace ashore. This practise the American and English courts explain simply on a discretionary basis. On the other hand, most of the continental courts, following the French practise, take the position that international law does not permit interference with a foreign vessel unless the acts committed aboard involve strangers to the vessel or endanger peace and tranquillity ashore or unless the aid of the local authorities is invoked. Despite these theoretical differences the practises of Anglo-American and continental courts do not vary greatly.

Until recently government owned or operated vessels were regarded as having while in port certain immunities from local jurisdiction not enjoyed by privately owned merchantmen, on the ground that they were invested with the character of public vessels which shared the sovereign immunities and privileges of their governments under international law. With the rapid increase of government ownership and operation of merchant ships engaged in ordinary maritime commerce the inconveniences of such privileges became more pronounced; and following the opinion expressed by text writers and also the court decisions of several countries, notably Italy, Belgium and later France, the International Convention for the Unification of Certain Rules concerning the Immunities of Government Vessels, signed at Brussels on April 10, 1926 (for text see United States, Department of State, *Treaty Information Bulletin*, no. 18), assimilated such vessels to privately

owned merchantmen. Although the convention is not yet in force because of failure of several of the signatories to ratify and although the United States is not a party to it, there seems to be little doubt that the general tendency is strongly in favor of the denial of jurisdictional immunity of merchantmen merely by reason of government ownership or operation.

The status of merchantmen is materially affected in case of war. On the high seas enemy merchantmen are subject unqualifiedly to capture and in exceptional cases to destruction by belligerent warships. Enemy merchantmen in port at the outbreak of a war were in earlier times subject to capture and confiscation. But since the middle of the nineteenth century the practise of belligerent powers has been to allow a certain period of grace in which enemy merchantmen are permitted to depart freely. This practise was embodied in the Convention Relating to the Status of Enemy Merchant Ships at the Outbreak of Hostilities adopted at the Second Hague Conference in 1907. Freedom from confiscation was conceded also to enemy merchantmen which left port before the outbreak of a war and were ignorant of its existence, although such ships might be detained subject to subsequent restoration without indemnity.

Prior to 1856 merchantmen were extensively used as warships in maritime warfare. The belligerent governments, which in earlier times seldom possessed a standing navy, issued commissions, or "letters of marque," to private vessels, which were then called privateers. With the abolition of privateering in 1856 by the Declaration of Paris states resorted to other forms of utilizing their merchant marine; they began to convert their merchantmen into duly commissioned warships. Although this practise, first used by Prussia in 1870, was objected to by France as a disguised form of privateering it was legalized by the adoption of the Convention Relating to the Conversion of Merchant Ships into Warships at the Second Hague Conference in 1907. This convention, however, enacted specific rules as to the place at which and conditions under which conversion of merchantmen into armed vessels might be effected and provided for the placing of such vessels under the direct command of naval authorities so as to prevent the recurrence of the lawlessness attendant upon the practise of privateering.

On the other hand, the neutral flag state's exclusive jurisdiction over its merchantmen is severely impaired by the belligerent's right of visit and search to ascertain the *bona fide* neutral character of the ship and the ownership and destination of the cargo and by the right of capture in case the vessel carries enemy goods or contraband or is guilty of breaking a blockade or of unneutral service. It should be noted that the basis for the determination of the nationality of a vessel in time of war is different from that in time of peace. A neutral owner's domicile in enemy territory may cause enemy status to be attributed to a vessel. The exercise of the right of visit, search and capture of neutral merchantmen has been at all times a much disputed issue between belligerents and neutrals. In order to escape capture and condemnation merchants of belligerent countries began from early times to transfer their vessels to neutral owners in order to secure the more or less extensive protection of the neutral flag. As such transfer was in many instances only feigned, belligerents have laid down increasingly stringent rules for determining the *bona fide* nature of such transfer. Difficulties have arisen also from the use of neutral flags by belligerent vessels for the purpose of deceiving enemy warships. These and other cognate matters are regulated by the international law of neutrality and of belligerent rights and duties.

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See: MARITIME LAW; INTERNATIONAL LAW; FREEDOM OF THE SEAS; TERRITORIAL WATERS; JURISDICTION; NEUTRALITY; ARMED MERCHANTMEN; BLOCKADE; TRADING WITH THE ENEMY; CONTRABAND OF WAR; ALIEN PROPERTY; ANGARY; PRIZE; PRIVATEERING; PIRACY; SLAVE TRADE; MERCHANT MARINE.

Consult: Jessup, Philip C., *The Law of Territorial Waters and Maritime Jurisdiction* (New York 1927); Gidel, Gilbert, *Le droit international public de la mer*, 2 vols. (Châteauroux 1932), especially vol. i. For further bibliography see: Hershey, Amos S., *The Essentials of International Public Law and Organization* (rev. ed. New York 1927), especially p. 297–317, 326–38, 569–71, 627–29; Oppenheim, L. F. L., *International Law*, 2 vols. (4th ed. by A. D. McNair, London 1926–28), especially vol. i, p. 279–85, 488–9?, and vol. ii, p. 163–68, 179–91, and 223–29. For leading decisions of national courts see: Wildenhus' case, 120 U. S. 1 (1887); Cunard Steamship Co. *v.* Mellon, 262 U. S. 100 (1923); The Queen *v.* Keyn, L. R. 2 Ex. Div. 63 (1876); The Sally and the Newton, France, *Bulletin des Lois*, 4th ser., vol. v (1807) 602–04; "The Tempest," France, Jurisprudence Générale, *Recueil périodique et critique de jurisprudence, de législation et de doctrine* (1859) pt. i, p. 88–93. For the case of the S. S. "Lotus" see Permanent Court of International Justice, *Publications*, ser. A, no. 10 (Leyden 1927).

MERCHANTS ADVENTURERS. *See* CHARTERED COMPANIES.

MERCIER DE LA RIVIÈRE, PIERRE-PAUL (Lemercier or Le Mercier) (1720–93), French physiocrat. From 1747 to 1759 Mercier was councilor at the Parlement of Paris and from 1759 until 1764 intendant on the island of Martinique, where he compromised himself by violating the restrictions of the colonial system sanctioned by the *Pacte colonial*. After 1765 he became an avowed adherent of the physiocratic school, of which his *L'ordre naturel et essentiel des sociétés politiques* (2 vols., Paris 1767; reprinted with introduction by E. Depitre, 1 vol., 1909) constituted one of the most reverberating productions. Its publication was followed by an invitation to Mercier to visit and advise Catherine the Great; but the two failed to be harmonious and Mercier's stay was not protracted. In 1768 Dupont de Nemours issued an abridgment of *L'ordre naturel* under the title *De l'origine et des progrès d'une science nouvelle* (Paris 1768; reprinted with introduction by A. Dubois, 1910).

Mercier's work developed and analyzed the governmental ideals of physiocracy, obscuring its original agricultural tenets but resting entirely upon doctrines already outlined in Quesnay's "Despotisme del a Chine" (in *Éphémérides du citoyen*, 1767). Coownership of all fixed wealth by the hereditary sovereign is, according to Mercier, the necessary political counterpart and balance for private property and class inequality, which are the essential characteristics of the social order. The fundamental unity of the law becomes incarnate in the sovereign, who must be an absolute monarch exercising the legislative power as well as the executive. If the legislative function were to devolve upon representatives of the nation and to be shared in by a multitude of men, "among whom inequalities exist and should exist and each of whom however is desperately eager that the inequality turn in his own favor," the result would be only to bring into relief the irreconcilability of private interests. Abuse of "legal despotism," as the physiocratic political ideal is known, would not occur if the sovereign understood his own interests or, in case he lacked such understanding, it could be speedily terminated by recourse to the ungainsayable sanction of physical force. To provide an additional safeguard the magistrates of the king not only should enjoy complete independence but when new laws were contemplated should have the right to examine them, to register a suspensive veto and even to exercise constitutional control over them. Public opinion, "queen of the world," would be the final check; as Mercier pointed out in his "Mémoire sur l'instruction publique" (in *Nouvelles éphémérides*, nos. ix–x, 1775), its supremacy should be rendered enlightened by the organization of a public educational system to disseminate throughout the nation the irresistible evidence of reason. When he referred to the nation he meant essentially the landed proprietors and the agricultural entrepreneurs, the only subjects whose wealth could not be "rendered mobile without loss." Laborers he excluded as an unstable category of population having no organic connection with the fatherland.

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Other works: *L'intérêt général de l'état* (Paris 1770); *Essai sur les maximes et les lois fondamentales de la monarchie française* (Paris 1789); *Palladium de la constitution politique* (Paris 1790).

Consult: Weulersse, G., *Le mouvement physiocratique en France*, 2 vols. (Paris 1910); Silberstein, L., *Lemercier de la Rivière und seine politischen Ideen*, Historische Studien, vol. clxxx (1928); Joubleau, M. F., in Académie des Sciences Morales et Politiques, *Séances et travaux . . . compte rendu*, vol. xlvi (1858) 439–55, vol. xlvii (1859) 121–50, 249–65; Larivière, C. de, "Mercier à St. Pétersbourg en 1767" in *Revue d'histoire littéraire*, vol. iv (1897) 581–602; Richner, E., *Le Mercier de la Rivière, Führer der physiokratischen Bewegung in Frankreich*, Zurcher volkswirtschaftliche Forschungen, vol. xix (Zurich 1931).

MERGER. *See* COMBINATIONS, INDUSTRIAL.

MERIT SYSTEM. *See* CIVIL SERVICE.

MERIVALE, HERMAN (1806–74), English colonial theorist and administrator. After a brief and unsuccessful career as a lawyer Merivale became professor of political economy at Oxford, where from 1839 to 1841 he lectured on colonization and colonies. These lectures, particularly interesting for their analysis of Wakefield's land settlement scheme, won him in 1847 the assistant undersecretaryship for the colonies. In 1848 he became permanent undersecretary and from 1859 until his death served in the India Office in the same capacity.

While not of the anti-imperialist group Merivale believed with them that the expense of defending and administering colonies was unjustified without concrete reciprocal benefits to the home country. He saw real value in colonies as a field for emigration, trade and investment. While he held also that the self-governing colonies would ultimately withdraw from the empire, he recognized the force of imperial sentiment and even commended it moderately. He advocated

unrestricted trade and more complete autonomy for the "settlement" colonies, union with which might be preserved by gradual relaxation of the bonds of dependence and military protection, and retention of the nominal supremacy of the crown. Merivale's direct influence on colonial policy from his strategically placed offices must have been considerable. In 1860, shortly before far reaching changes occurred in Indian administration, the *Spectator* attributed to him chief responsibility for the government's measures.

In politics Merivale was a Liberal. He wrote frequently on historical, economic and literary topics for the *Edinburgh Review*, *Pall Mall Gazette* and other periodicals.

DONALD O. WAGNER

Important works: *Lectures on Colonization and Colonies*, 2 vols. (London 1841–42; new ed., 1 vol., 1861; reprinted Oxford 1928); *Historical Studies* (London 1865).

Consult: Bodelsen, C. A. G., *Studies in Mid-Victorian Imperialism* (Copenhagen 1924); Wagner, Donald O., "British Economists and the Empire" in *Political Science Quarterly*, vol. xlvi (1931) 248–76, and vol. xlvii (1932) 57–74.

MERKEL, ADOLF JOSEF (1836–96), German jurist. Merkel was born in Mainz, the son of a Hessian jurist. He was professor successively at Prague, Vienna and Strasbourg and in 1893 was elected to fill Jhering's place as corresponding member of the Berlin Academy of Sciences.

Merkel presented with unrivaled skill, which indeed approached art, the deeper relationships of crime and punishment in social life. As the "legal philosopher of positivism" after the downfall of the great idealistic systems he limited the subject of his scientific and philosophical investigations to historically received legal material. In his attempt to advance from the given legal forms to the general concepts of the criminal law and of law in general he identified the philosophy of law with general legal doctrine. He thus became an exponent of so-called *Allgemeine Rechtslehre* as the proper concern of the theoretical jurist. In following the great evolutionary history of the law he saw it as advancing in increasing measure toward its role as a system of peace, as neutral mediator between conflicting powers. Although his point of view, which was causal, did not stop at human action it did not, however, sacrifice personal responsibility by his confession of determinism. For guilt was for him a double judgment: a causal leading back of the deed to the human personality and a judgment according to the prevailing value judgments on which the law rested. Punishment was retaliation but it was no longer to be accepted as a categorical imperative. Indeed the increasing objectivization of the criminal law signified a narrowing of the state's powers of punishment, as is evident in such results as the differentiation of special crimes and in the necessary relation of penalties to the gravity of particular crimes — in decided contrast to a pure system of prevention, which takes symptoms of future danger as the occasion for indefinite measures of safety.

Thus Merkel seemed to Liszt the "deterministic opponent of purposeful punishment" (*Zweckstrafe*). Liepmann and Kohlrausch, on the other hand, found in his doctrines valuable beginnings for a critical deepening and delimitation of the criminal law reform movement. There can be no doubt that he acted as intermediary in the conflict between the classical and modern schools, for while he retained the old concepts in name he filled them with new meaning. But philosophically the monism of the historico-empirical method is wrong. That which should be cannot be derived from that which is becoming. Positivism eliminates justice from the law. Nevertheless, it remains the merit of Merkel to have penetrated deeply into the historical evolution and the sociological relations of law and politics.

MAX GRÜNHUT

Important works: *Kriminalistische Abhandlungen*, 2 vols. (Leipsic 1867); *Juristische Enzyklopädie* (Berlin 1885; 7th ed. by Rudolf Merkel, 1922); "Munzverbrechen und Munzvergehen," and "Die Eigentumsverletzungen" in *Handbuch des deutschen Strafrechts*, ed. by F. von Holtzendorff, 4 vols. (Berlin 1871–77) vol. iii, chs. xv, xxvii, and vol. iv, ch. xv; *Hinterlassene Fragmente und gesammelte Abhandlungen*, 2 vols. (Strasbourg 1898–99); *Die Lehre von Verbrechen und Strafe*, ed. by Moritz Liepmann (Stuttgart 1912).

Consult: Liszt, Franz von, "Die deterministischen Gegner der Zweckstrafe," and Liepmann, Moritz, "Die Bedeutung Adolf Merkels fur Strafrecht und Rechtsphilosophie" in *Zeitschrift für die gesamte Strafrechtswissenschaft*, vol. xiii (1893) 325–70, and vol. xvii (1897) 638–711; Kohlrausch, Eduard, "Über deskriptive und normative Elemente im Vergeltungsbegriff des Strafrechts" in Walter, Julius, and others, *Zur Erinnerung an Immanuel Kant* (Halle 1904) p. 267–84; Stintzing, R. von, and Landsberg, E., *Geschichte der deutschen Rechtswissenschaft*, 3 vols. (Munich 1880–1910) vol. iii, pt. ii, p. 709–14.

MERRHEIM, ALPHONSE (1881–1925), French labor leader. Merrheim, an outstanding representative of revolutionary syndicalism, was of proletarian origin. A balanced, clear thinking,

self-trained leader, he was an organizer of great power. After the decline of individualistic anarchism, which had been compromised by a series of acts of violence in 1892–93, French anarchists entered the trade union and cooperative movements, opposing to proletarian parliamentarism economic action in the form of the general strike. They attacked the influence of intellectuals in the labor movement, regarded the union rather than the party as the basis of the proletarian movement and in general followed Proudhon rather than Marx. Merrheim was one of the organizers of the boiler makers' union and of the Confédération Générale du Travail (C.G.T.) founded in 1895 along these lines and he was general secretary of the important metal workers' union from 1909 to 1924.

Merrheim became important chiefly during the World War, which unlike most leaders of the C.G.T. he opposed. He founded the Comité pour la Reprise des Relations Internationales and with Bourderon participated in the international conferences at Zimmerwald in 1915 and Kienthal in 1916, allying himself with the right wing of the internationalist socialists. His demand was for peace without annexations, following the general policies laid down by Woodrow Wilson and opposing those of the Zimmerwald left led by Lenin. He collaborated with the right wing leaders of the C.G.T. and the government to terminate the metal workers' strike of 1918. At first a defender of the Bolshevist revolution as correct for Russia, he later became a bitter critic of the Communist movement. At labor union congresses after the war he declared that he had never wished to hinder military operations by his propaganda, he opposed resolutions attacking the C.G.T. war record, he voted against affiliation with the Red International of Labor Unions and he urged that the C.G.T. devote itself to a war against immorality in all classes. He died as the result of a mental disease.

CHARLES RAPPOPORT*

Consult: Picard, Roger, *Le mouvement syndical durant la guerre*, Carnegie Endowment for International Peace, Social and Economic History of the World War, French series, vol. xxxi (Paris 1927); Saposs, David J., *The Labor Movement in Post-war France* (New York 1931); Losowsky, A., *Frankreich und die französische Arbeiterbewegung in der Gegenwart*, Red International of Labor Unions, Bibliothek, vol. xiii (Berlin 1922).

MESMER, FRANZ ANTON (1733/34–1815), Austrian physician. The main surviving interest in Mesmer is concerned not with his somewhat adventurous career, beginning in Vienna in 1777 with the reputed cure of a case of blindness by the use of magnets and closing abruptly in Paris in 1784; nor with the excited scenes about the *baquet*, where ladies of fashion crowded his curative and lucrative seances; nor with the successive scientific commissions which passed, most of them unfavorably, upon his pretentious claims to the discovery of a new, beneficial force, animal magnetism; but rather with his relation to the later recognition of hypnosis as a psychotherapeutic agency.

The accepted verdict of Mesmer as a charlatan does not entirely deprive him of a place of consequence. The discoverer of the fact that the more susceptible subjects whom Mesmer magnetized were in an abnormal state of mind, responding to suggestions or commands from the *magnétiseur* and unresponsive to their surroundings, was the Marquis de Puységur, one of the private pupils of Mesmer enrolled in the select Loges d'Harmonie. Continuing the observations after the revolution upon peasants on his estate, Puységur clearly recognized their abnormal condition. He utilized it by having the entranced subjects, whom he called *somnambules*, prescribe for the ailments of the sick who came to him for cure. He believed that these subjects, whose state he termed "artificial somnambulism," could see and read the internal conditions of the bodily organs. The condition was decisively recognized by James Braid in 1843, who gave it the name of hypnotism. Both before and after Braid the role of suggestion was indicated; but this clue was not made central until the school of Nancy demonstrated (about 1880) the major influence of this factor as against the school of Paris headed by Charcot, who regarded the state as of direct physiological origin and distinguished three such conditions. The period of the 1890's witnessed a marked revival of the use of hypnosis in therapeutic treatment; it has since receded to a minor place, although it is still useful in conjunction with other methods of psychotherapy and for the purposes of research.

Mesmer's insistence upon his theory of animal magnetism, itself a revival of an earlier discredited notion of magnetic and planetary influence, prevented his recognition of the true condition of his subjects. His opposition to the prevalent view that it was all imagination was, however, in the line of progress. But for Mesmer, the course of discovery might have been far different.

JOSEPH JASTROW

Consult: Janet, Pierre, *Les médications psychologiques*,

3 vols. (Paris 1925–28), tr. by E. and C. Paul, 2 vols. (London 1925) vol. i, p. 29–43; Zweig, Stefan, *Die Heilung durch den Geist* (Leipsic 1931), tr. by E. and C. Paul as *Mental Healers* (New York 1932) p. 3–100; Schurer-Waldheim, F., *Anton Mesmer, ein Naturforscher ersten Ranges* (Vienna 1930); Bersot, Ernest, *Mesmer et le magnétisme animal* (4th ed. Paris 1879).

MESSEDAGLIA, ANGELO (1820–1901), Italian economist, sociologist and statistician. Messedaglia was professor of law at Padua and of administrative law and later of political economy and statistics at the University of Rome. Early in his career he published *Dei prestiti pubblici e del miglior sistema di consolidazione* (Milan 1850), a theoretical and practical study of the formation, management and consolidation of public debt. It was followed by *Della teoria della popolazione* (Verona 1858), in which he criticized the work of Malthus by showing the inadequacy of the two Malthusian progressions and corrected them by a third series which approximates more closely the actual growth of population. He continued his writings on demography with an essay on M. A. Guerry, *Relazione critica sull'opera di M. A. Guerry* (Venice 1865), and *Studi sulla popolazione* (Venice 1866), both of which first appeared in the *Atti* of the Istituto Veneto. Of importance too are his parliamentary report on the distribution of land, the cadastre and the land tax (Parlemento Italiano, Camera dei Deputati, Sessione 1882–86, Discussione, *Atti*, vol. xv), distinguished for its elaborate analysis and wealth of detail; and *La storia e la statistica dei metalli preziosi* (Rome 1881) and *La moneta e il sistema monetario in generale* (2 vols., Rome 1882–83), both of which first appeared in the *Archivio di statistica*, in which he formulated inductive laws of monetary circulation.

In the field of statistics, which he elevated to the dignity of a science, Messedaglia contributed a number of studies including his essays on the organization, collection and significance of criminal statistics (*Le statistiche criminali dell'Impero austriaco nel quadriennio 1856–1859*, Venice 1866–67; first published in the *Atti* of the Istituto Veneto); his subtle investigations into the concept, statistical significance and the methods of determining the average life ("Il calcolo dei valori medi e le sue applicazioni statistiche" in *Archivio di statistica*, vol. v, 1880, p. 177–224, 489–528); and the five unforgettable introductory lectures to his course on statistics given at the University of Rome, in which he treats in a masterly manner the method, function and scope of the science (*V prelezioni al corso di statistica*, Biblioteca dell'Economista, vol. xix, Turin 1908).

Messedaglia made use of the mathematical, statistical and historical methods but regarded them as auxiliary means; he was always aware that they do not by themselves explain the complexity of economic phenomena. He had a keen perception moreover of the interrelations of the various disciplines, as is evidenced in his *L'economia politica in relazione colla sociologia e quale scienza a sè* (Rome 1891), an erudite essay on the relations between economics and sociology, in which he shows also the influence of knowledge on the social order; he frequently referred to this study as his scientific testament. Among Messedaglia's other writings are works on astronomy and geography of ancient epochs and a translation of Longfellow's poems.

ALBERTO DE' STEFANI

Works: Messedaglia's more important works have been collected in *Opere scelte di economia e altri scritti*, 2 vols. (Verona 1920–21).

Consult: Lampertico, Fedele, *Commemorazione di Angelo Messedaglia* (Venice 1902); Stefani, Alberto de', *Discorso su A. Messedaglia* (Vicenza 1914), and *Gli scritti monetari di Francesco Ferrara e di Angelo Messedaglia* (Verona 1908); De Viti de Marco, Antonio, *Due commemorazioni: Angelo Messedaglia; Maffeo Pantaleoni* (Rome 1927); Scalfati, S. G., *Gli scritti finanziari di A. Messedaglia* (Rome 1932).

MESSIANISM is primarily the religious belief in the coming of a redeemer who will end the present order of things, either universally or for a single group, and institute a new order of justice and happiness. Under various forms and under various names messianic ideas have sprung up without any apparent interconnection in widely scattered religions. They seem to answer to a universal ingrained longing in humanity for a world free from the imperfections and sufferings connected with this one and to the hope that a personal redeemer, a hero-god, will bring about salvation. As a driving social force, however, messianism has assumed great importance only in Persian Zoroastrianism and above all in Judaism, whence it has gone over into Christianity and Islam. It is in the Jewish doctrine of the Messiah that the doctrine of the coming of a redeemer received its greatest and most characteristic development, a development that not only influenced the religious thought of the West but also indirectly inspired modern secular movements.

Messianism has been closely connected with other religious ideas, such as eschatology, or the

doctrine of the final things concerning man and the world, and the theory of the ages of the world, which is the basis of chiliasm, or millenarianism; but messianism is not to be confounded with these other ideas. Speculation about final things, such as death, life after death and the end of the world, which is quite general in religious doctrine, does not necessarily involve a distinct messianic belief; on the other hand, Jews often thought of the coming of the Messiah without implying thereby the end of the world or even the transformation of the whole world. Messianism moreover is never mere theoretical speculation about things to come; it is always a living practical force. It is a belief held with religious fervor by oppressed or unfortunate groups (ethnic, social, religious) or by men suffering either from the imperfection of their fellow human beings or from the consciousness of their own inadequacy, that a change will come which will end their sufferings and fill the world with piety and justice. There is always in messianism a non-acceptance of the present order and a sentiment of revolt against things which seem unbearable.

Often messianism was the expression of a narrow group mind. In such cases it meant that to the suffering group alone justice would be done and that for them alone sufferings would end and new happy life begin. But even in earlier Judaism messianism had already acquired a wider, more universal aspect as well as a more spiritual meaning. It meant that the whole of mankind was suffering either from misery and oppression or from moral imperfection and that the Messiah would bring to all mankind justice, deliverance from misery and pain, a blossoming of the life of the spirit and a reign of brotherhood and peace. Messianism was thus a philosophy of history and a theodicy which explained the ways of God. As such it passed into Christianity and accompanied the struggle of heretical sects and oppressed classes for the realization of their dreams and aspirations; it lent its forms and symbols to the obscure longing of millions; and it ended up by being clothed in the garments of the philosophy of the Enlightenment and modern social science, becoming the secular idea of progress, that is to say, a messianism deprived of its religious forms but retaining its religious fervor.

Both aspects of messianic doctrine, the narrow messianism which aims only at a fundamental betterment of a national political situation and the universal messianism which embraces in its salvation the whole of mankind, are often to be found associated together, the deliverance of the group being thought of as a vehicle or preliminary condition of universal deliverance. This intermingling of national ambitions and religious concepts, as evolved by the Jews and taken over by most European peoples (particularly those of great and active intellectual and spiritual life), is not without danger for world peace and security. Through the religious element national political hopes become strengthened and deepened into the belief that their fulfilment is an action of divine justice and that the struggles for their realization must be carried on as commands of God. National messianism thus becomes the cradle of an unbridled imperialism: the nation, the chosen vehicle of God's designs, sees in its political triumph the march of God in history. The concept of proletarian revolution also owes much of its driving force to messianism.

The comparative history of religions reveals ideas similar to Jewish messianism flourishing in various religions but remaining without a dominant influence either in the particular religion or in cultural history. Among such ideas may be mentioned the doctrine of Maitreya, or Metteyya, the future Buddha, whose advent will bring about a golden age of the future. This theory of Maitreya is the product of a rather late stage of Buddhism at the time when the doctrine of the many Buddhas, or Bodhisattvas, was developed. Of more importance is the doctrine connected with Vishnu, who was considered the "guardian and restitutor of *dharma*, or justice" (Paul Deussen) and often raised to the position of the supreme or even the unique god in Indian mythology. Vishnu was pictured as descending to earth from time to time and in different forms. "Every time when justice has withered and injustice dominates, I myself recreate myself." Ten descents (avatars) of Vishnu are known in Hindu theology; the last avatar (the tenth, when Vishnu will come as a Kalki, a white winged horse) has yet to occur and will destroy the earth.

The closest resemblance to Jewish messianism is found, however, in the doctrine of Saoshyant, the coming helper, in Zoroastrianism. Zoroaster himself believed originally like Jesus that the fulness of time was near and that the reign of Ormazd, the kingdom of God, would come during his lifetime. For Zoroastrianism as for many millenarian sects the world is a battle ground between God and the Evil One (who is in

Christian theology represented by Satan or Antichrist), and the duty of men is to help God to win His victory. Zoroaster believed that the decisive battle between Ormazd and Ahriman was at hand and that Ormazd's victory would usher in a new age, a new aeon, when evil would be definitely banned and God alone reign. But inasmuch as the fulness of time had not come during Zoroaster's life, the decisive battle and the coming of the kingdom had to be postponed as in Christianity to a second advent. Zoroastrians believe that three thousand years after the death of Zoroaster a new Saoshyant will come and the new aeon begin.

The word messiah (Hebrew *māshīah*) means literally the anointed one. Although in the Hebrew Bible the word is never used as a *nomen proprium* it begins to be so used as early as the apocalyptic literature of the second century B.C., and it is from then on that beliefs were crystallized concerning the coming of a particular or personified "anointed one" as a redeemer. To understand these doctrines it is necessary to realize first of all that the distinguishing characteristic of the Jewish people since its beginnings has always been its consciousness of history, its historical mindedness. For the Jews God is not a God of nature but a God of history. Beyond all other peoples the Jews see in history, in duration and change, the work of one creative force, which fills the constant flow of time with meaning and gives it a direction. From the beginning the Bible is a book of history and this history has its unity in the underlying plan of God, who will carry it out to the end. The basis of all philosophies of history is to be found in the Bible.

Jewish messianism did not like analogous movements elsewhere arise out of mythological speculations; it sprang from living historical experience and it became eschatological, that is to say, projected into the future, through historical disappointment. The original historical experience was later surrounded by myths and legends, as was also the future state projected by messianism. But at the beginning there was only a recollection of the covenant between God and Israel, the memory of an early theocracy in Israel, when God alone was king and the Israelites, His chosen people, had voluntarily taken upon themselves the yoke of His kingdom. These elements of a unique religious experience, an experience real and historical in its essence even though legendary in its coloring, proved so powerful that they not only settled once for all the history of Israel but dominated the history of many groups and sects for two thousand years. And in however legendary a fashion the future may have been embroidered, its fulfilment was envisaged essentially as a return to the theocracy of the beginning, to the reign of David, the last king upon whom a charismatic commission was laid by God. The messianic future never was in heaven but was always a phase of human history, whose stage was the earth—a transfigured earth sometimes but still the earth, where God alone will be king and life remain a human life, purified and clarified but still human. Just as history is never the biography of one man but the collective life of a group, so messianism meant the salvation never of an individual but always of a group or of humanity. "The ultimate salvation of the individual is inseparably connected with the salvation of the people, and inasmuch as, in accordance with the prophetic teaching, this was made dependent on the righteousness or the repentance of the nation collectively, the conduct and character of the individual concerned not himself alone but the whole Jewish people" (George F. Moore).

Not only does messianism have its roots in the union of national politics with universal religion, in the kingdom of God as it was established by the covenant between God and Israel, but in its preachment for the future it also combines the same elements. It looks forward to the coming of the same kingdom of God which existed in the past—this time, however, in an ultimate form which is never again to be disturbed. The national-political phase of messianism is not prior to or later than the ethico-universal phase. Both are to be found, although with different degrees of dominance, in the same epochs; sometimes both are even found mingled in the same men.

In the national-political phase of messianism the Messiah remained a national hero who was to fulfil the old promise given by God and originally fulfilled by God Himself in the wars of Yahweh in the time of Joshua and the judges. The Messiah will again reinstate the Jewish people in undisturbed possession of Palestine; he will gather the scattered people from all the ends of the world; he will destroy as a great warrior the enemies of Israel; and Israel will reappear in the glory of the strong and powerful reign of David. The salvation (*geulah*) which the Messiah brings is a political salvation for the Jews only. But at the same time the people re-

constituted in their kingdom will lead a righteous life, piety and justice will prevail and God's law will be kept. Messianism meant thus throughout the ages "the will to live dominantly and triumphantly as a rehabilitated people in its national home" (Abba Hillel Silver). In this sense messianism has been one of the dominant forces in Jewish history since the weakening of the secular power of the Jewish state. For two thousand years it was the great hope of the Jewish people, the vision and faith which sustained them in their terrible history of persecutions and humiliations. The Jews prayed daily for the coming of messianic salvation; they bore willingly in this hope the heavy yoke of Judaism; and with thousands upon thousands of martyrs they magnified and exalted their God who had promised to restore the nation to its ancient glory and to inaugurate by the joyful regathering of the people into their homeland His kingdom in perpetuity. Thus the Messiah became for Israel in the dark hours of history *Menachem*, the comforter. In the beautiful old benedictions dating from the earliest days of the Pharisaic synagogue and constituting the *Shemoneh 'Esreh* prayer, which is recited at the three daily services, the fourteenth benediction reads as follows: "And to Jerusalem, Thy city, return in mercy, and dwell therein as Thou hast spoken; rebuild it soon in our days as an everlasting building, and speedily set up therein the throne of David. Blessed art Thou, O Lord, who rebuildest Jerusalem." The next benediction directly prays for the coming of the Messiah, the seed of David: "Speedily cause the offspring of David, Thy servant to flourish, and let his horn be exalted by Thy salvation, because we wait for Thy salvation all the day. Blessed art Thou, O Lord, who causest the horn of salvation to flourish."

The hope for deliverance and for the termination of the Diaspora was so strong that from the end of the Hasmonaean dynasty, when the Messiah had to maintain the independence of Israel against the Romans, until the eighteenth century there was a long line of pseudo-messiahs, who believing themselves to be appointed by God sought to restore the Jews to their ancient kingdom. During the period of Jesus there was a large number of such messiahs in Palestine, and afterward they came forward in many lands and almost in every country; some of them were only of local importance, but some created movements which spread over many countries and unified the Jews in a common hope for a considerable time. The most important pseudo-messiah was the Turkish Jew Shabbethai Zebi (1626-76). The outcome of all these messianic movements was always a deep disillusionment, and their effect on Jewish life was in many ways pernicious. Messianism in this politico-religious form died with the growth of modern rationalism in Judaism; but the hope of two thousand years has remained alive and has taken a secular political form in Zionism, which unites the faith of politico-national messianism with the European doctrine of nationalism.

But side by side with this nationalistic messianism there developed from the very beginning the tradition of universalistic messianism. The nation which has been oppressed and humiliated will not only become free and glorious but it will become a light unto the nations, their guide on the road to God, the teacher of the nations of the earth. This seminational universalism, which was to find its echo in the nationalism of many modern nationalists in Russia, Poland, Germany, India and other countries, is already expounded in *Isaiah* II: 2, 3: ". . . the mountain of the Lord's house shall be established in the top of the mountains, and shall be exalted above the hills; and all nations shall flow unto it. . . . For out of Zion shall go forth the law." A further stage in the universalization of messianism is represented by the idea of messianism as ethical and religious salvation for mankind. The kingdom of God is then understood as a universal kingdom of peace and justice, still a kingdom of the earth but metapolitical. In the oldest period the belief was that God Himself would bring about the redemption, the Messiah, if he is mentioned at all, being only His tool. This belief is expressed in the sublime *'Alenu* prayer, which probably dates from the second century after Christ but which an old tradition claims as being written by Joshua upon his entrance into Canaan: "We therefore hope in Thee, O Lord our God, that we may speedily behold the glory of Thy might, when Thou wilt remove the abominations from the earth . . . when the world shall be perfected under the Kingdom of the Almighty, and all the children of flesh will call upon Thy name, when Thou wilt turn unto Thyself all the wicked of the earth. Let all the inhabitants of the world . . . accept the yoke of Thy Kingdom, and do Thou reign over them speedily, and for ever and ever. For the Kingdom is Thine."

The messianic ideal found its most definite ethico-universalistic concepts in the Hebrew prophets; with many of them the coming king-

dom of God meant a universal reign of peace and justice where the great enemies of humanity, fear and misery, will be banned. Messianic time will bring a redress of present misery. The poor and the persecuted become the truly pious. Messiah, who had been a king, now becomes himself a poor outcast, a symbol of human suffering, who ennobles it by his example. He does not use the noble horse but the ass, the despised riding animal of the poor. He becomes the servant of God (*'Ebed Yahveh*). "He hath no form nor comeliness. . . . He is despised and rejected of men; a man of sorrows, and acquainted with grief" (*Isaiah* LIII: 2, 3). Here is a complete revaluation of values. The man who is weak, poor, despised and ugly will bring about the redemption. And in him are exalted all the lowly and despised on earth. Whatever may be the historical explanation of the *'Ebed Yahveh*, a new epoch of world history begins with this notion. An unflagging unrest breaks into the settled order of the social world: in the name of this unrest, of this messianic dream, the despised and the disinherited will raise their banners again and again in their fight for a new social order. Peace and unity, equality and brotherhood, will become the slogans of all utopias and revolutions, the banners of man setting forth to build the kingdom of God on earth.

Very soon the doctrine becomes general that the coming of the Messiah will be accompanied by great suffering and wars. Catastrophes of an unprecedented character, natural, social, political and moral, will introduce the messianic age, when misery will be at its height because salvation will be close at hand. The Messiah will have precursors who will prepare men for his coming, for the advent of the Messiah is made dependent upon the righteousness of the people. The conviction becomes widespread that by a saintly life one may hasten the arrival of the Messiah. Many sects prepare themselves by ascetic exercises, by communistic brotherhood and by the fulfilment of the law for the approach of the kingdom. The cry, "Repent, for the end is near," is to be heard again and again through the ages.

Messianic time was pictured in the Bible as a time of uncommon fertility, prosperity and longevity (*Isaiah* XXXII: 15–17; LXV: 17–23), but in the apocalyptic literature it was pictured in mythological and supranatural colors. The Messiah was exalted beyond human measure and his conception was mixed with Hellenistic and oriental images.

All these elements of messianic ideas are to be found in the later rabbinical writings. "The conception itself of a Messiah varies so much with individual rabbis and the divergence of opinion with regard to the details is so great that its form remains loose and unlimited" (Julius H. Greenstone). Some of the tanaim "lift themselves through their high ethics and deep piety to such a lofty spiritual plane that everything political becomes inconsequential, and strife and struggle a terrible evil. How could these pious men picture the Messiah as a bloody avenger, as a war hero—they who regarded the use of weapons in and for itself as a weakness?" (Joseph Klausner). They could not accept the idea of the Messiah as someone fighting in God's cause in the manner of a pagan general and could not consider national revenge and independence a good. The last of the tanaim, Jehuda I, even wanted to abolish the fast of the 9th of Ab, the day of Jerusalem's destruction, in order to destroy all memory of Jewish independence. Others, on the contrary, expressed the most coarse and exclusive notions of national supremacy. Many who wished to preserve the Messiah as the prince of peace declared that first a Messiah ben Joseph will come, who will fight the battle against Gog and Magog and be killed in the battle, and that then only will Messiah ben David arrive and with him the messianic age.

Various methods were used to calculate the arrival of the Messiah, the numbers seven and forty playing a great role in those speculations. Since God created the world in six days, it was believed that six thousand years in three ages of two thousand years will pass and then will come the universal Sabbath, the seventh millennium. Many rabbis opposed all such calculations as well as all efforts to force the advent of the messianic kingdom through acts of asceticism and similar means. They bade all men to await the coming of the kingdom with patience and piety.

In the nineteenth century messianism underwent a transformation parallel with the development of enlightened liberal Judaism. The dispersion among the nations was no longer considered a punishment for Israel but an act of divine providence for the realization of Israel's mission, "to lead the nations to the union of all children of God in the confession of the unity of God, so as to realize the unity of all rational creatures and their call to moral sanctification." Liberal Jews, like James Darmesteter, sought to show that the principles of prophetic messianism

were identical with those of the French Revolution.

Early Christianity, as expressed in the preaching of Jesus and in the life of His first followers, was pure messianism. Indeed the appellation *Christos*, or Christ, is the identical term by which the Hebrew word *māshīah*, anointed or Messiah, is translated in the Greek Septuagint. Christianity is thus by its very name a form of messianism. Jesus couched His message in terms understood by all the Jews of His time, who were filled with a feverish expectation of the coming of a Messiah. His prayer was "Thy kingdom come." His task was not the foundation of the kingdom but its preparation: He did not consider Himself the Messiah, but the consciousness grew in Him that He would soon return as the Messiah and inaugurate the kingdom of God. He and His followers were certain about the immediateness of the kingdom (*Matthew* x: 23; xvi: 28; *I Corinthians* xv: 51, 52; iv: 5; xi: 26; *I Thessalonians* iv: 15–17; v: 1–3), and His ethical teaching was focused on the short interregnum between the premessianic and the new age: it preached not an alleviation but a tremendous aggravation of duties in view of the approach of the kingdom.

As the kingdom did not come, however, and as the church had to maintain itself among the powers of this world, the teaching of the imminence of the messianic kingdom was kept alive only in heretical sects. It is here that there is found an uninterrupted, unofficial stream of truly Christian life keeping alive the original doctrine of Jesus through the ages, often in the face of violent opposition from the church and the state. Many of these sects found an answer to their queries about the Second Advent of Jesus in the apocalyptical literature, in *Daniel* and particularly in the *Revelation of St. John* xix: 11–xxi: 8. The *Revelation* spoke of a period of one thousand years to pass before the coming of the Messiah and of a New Jerusalem, and this idea gave rise to many millenarian, or chiliastic, sects, who expected the coming of Christ at a certain fixed date and divided history into various ages and periods.

Messianic movements in the churches were of two kinds: one kind aimed only at the spiritual regeneration of the individual Christian, while the other kind (which was more common) developed sectarian groups in conflict with the church and generally also with the state. Of the first kind the most noteworthy example was that championed by Joachim of Flora (1145–1202), who wished to realize a church of the Holy Spirit and who expected the Messiah to come in 1260. He distinguished the Age of the Father, or of the Old Testament; the Age of the Son, or of the New Testament, which has led to ecclesiastical corruption and secularization; and the Age of the Holy Ghost, or the Sabbath of Humanity, which was to be an age of full freedom of the spirit with all men given over to prayer and song.

The radical sect movements are to be found in all churches, Catholic, Greek Orthodox and Protestant. Like primitive Christianity they were in many cases a protest of the poor, a desire of the disinherited to enter into their own. These sects upheld with rare courage the principle that man owes obedience to God rather than to men, to the written word of God and the inner light rather than to secular or ecclesiastical authorities. They have been the great conscientious objectors of history. They have been persecuted by the churches, tortured and killed, but their eschatological enthusiasm kindled a fire which was never extinguished throughout the ages. The oldest of such sects is that of the Bogomiles, which originated in Bulgaria during the tenth century and spread from there to both the east and the west. The Bogomiles had no churches, no priests; they practised baptism only upon adults and they believed Christ to be the son of God only through grace like other prophets. They were radical social and political reformers who, like the sects that followed them, fought for human brotherhood, the abolition of private property and the renunciation of war and of the swearing of oaths to other men. They produced a deep influence on the religious spirit of the masses and created a rich popular literature. Another sect was the Cathari, or universalists, who believed in the salvation of all men and saw in the temporal world Satan's world. They took the Gospel and the Sermon on the Mount literally and seriously, led an anarchist life and shunned the killing of men or animals. Abbé Jean Guiraud says that the Catharistic rites "recall those of the primitive church with a truth and precision the more striking the nearer we go back to the apostolic age. In the bosom of mediaeval society the Catharistic rites were the last witness of a state of things that the regular development of the Catholic cult had enlarged and modified." The Catharistic movement was heavily represented in southern France, where Catharists went under the name of Albigenses and Waldenses.

Among the movements of the Reformation period are found the extreme Hussites under their leader Peter Chelčický, a forerunner of Tolstoy; the Adamites; the Moravians; and in the time of Luther the Anabaptists. The last named, under the leadership of Thomas Münzer, joined in the revolt of the German peasantry against the landlords. They made a memorable attempt to establish the kingdom of God on earth according to the Gospel, a true community of Christian saints in absolute equality and brotherhood. "It was easier to burn Anabaptists than to refute their arguments and contemporary writers were struck with the intrepidity and number of their martyrs. . . . The excesses of John of Leiden cast an unjust stigma on the Baptists, of whom the vast majority were good quiet people who merely carried out in practice the early Christian ideals of which their prosecutors prated" (F. C. Conybeare). Anabaptist sects sprang up all over Europe. They were strictly non-violent: the members had no recourse to arms or to courts; they applied no force to evildoers; they accepted no office and no rank in government. They may be regarded as one of the origins of modern socialist and anarchist movements.

In England the great revolution was deeply influenced by the theocratic ideas of the Bible. The Fifth Monarchy Men, a Puritan sect in the days of Cromwell, believed that after the passing of the Assyrian, Persian, Greek and Roman monarchies a fifth was at hand, when Christ would return and reign for one thousand years. At about the same date Manasseh ben Israel argued in his letter to the English Parliament that the readmission of Jews into England would hasten the messianic era. There were also many messianic sects in the Greek Orthodox church, such as the Khlysty and the Skoptsy, the latter believing that the Messiah would arrive as soon as there were 144,000 Skoptsy (*Revelation* XIV: 1). The Molokany and the pacifist Dukhobors may also be mentioned.

Even in the nineteenth century new millenarian sects were founded, like the Christadelphians, who hoped for a world wide theocracy with Jerusalem as its center, and the Templars, mostly Württemberg pietists, who went to Palestine to await there the Second Coming of Christ. But as a whole messianism assumed in the nineteenth century a new form. The ideals of universal peace, natural and equal rights, an equal distribution of wealth and an economic life in common grew out of the old theocracy of the kingdom of God, but they took on a secularized, rationalized form. What had once been believed on the authority of God's word became now a subject of social science and philosophy of history. But the old messianic hope and fervor did not die in the new atmosphere. Lessing spoke of the education of mankind toward the messianic kingdom, making messianism the result of an immanent process of history. Ibsen spoke of the "third kingdom," of a new age to come. Both utopian and scientific socialism have carried the spirit of the struggle for the kingdom of God into our time. Often bitterly opposed to the church and to religion, they nevertheless have sometimes been truer to the legacy of prophetic messianism and early Christianity than have the official religious bodies. A Russian philosopher has aptly called Bolshevism an attempt to establish the kingdom of God against God.

Even messianism in its narrow politico-nationalist form has found many disciples amongst the modern nations. The Slavophile writers in Russia, particularly Dostoevsky, have transferred the messianic concepts from Israel to the Russian people. Many of them have even seen in the Russian nation the Messiah, the *'Ebed Yahweh*, who is suffering for the sake of all other nations and who will some day be exalted over them. During the time of Poland's national subjection Polish philosophers like Wroński, Towiański and Cieszkowski and poets like Mickiewicz, Słowacki and Krasiński developed a messianic philosophy of history with Poland as the Messiah of the nations. They saw in the Poles the people chosen by God for bringing about the messianic age as they had formerly been chosen to fight the battles of Christianity against the heathen Turks. With the dominance of nationalistic ideology in the nineteenth and twentieth centuries many nationalist thinkers believed that their own nation was destined through its moral and intellectual predispositions, through the history of its body politic and its spiritual life, to bring about a new order of things and to raise humanity to new ethical standards. The personal Messiah is thus replaced, as it often was in Israel, by a whole nation as Messiah. The nation transcends the limits of a social or political concept; it becomes a holy body sanctified by God; and nationalism is no longer a political loyalty which can be changed according to social circumstances or convictions but becomes a religious duty full of responsibility toward God and the redemption.

The messianic idea and messianic movements

are also represented in Islam under the name of mahdism. As in Judaism, messianism arose with the Mohammedans out of historical expectations and disillusionments. The idea of a Mahdi was unknown to Mohammed and his first companions; it was conceived only under Jewish and Christian influences during the civil wars and religious controversies attending the rise of the dynasty of the Ommiads. The subsequent development of the caliphate and the decline of Moslem piety and power evoked a belief in the golden age of Islam, the reign of Mohammed and the first four caliphs, and a longing for its restitution. Many Moslems believed that the lack of piety had brought about the increase of injustice and the decline of power of the caliph and of the faithful. They hoped that when injustice will have reached its acme the Messiah, called Mahdi, the rightly directed or guided, will restore the ancient glory and open a reign of piety and justice. The theory of mahdism has not been generally accepted in the Sunna and had not become a fundamental dogma of orthodox Islam, but it has become the central idea of the Shiites, a sect who remain faithful to the caliphate of 'Ali, the son-in-law of Mohammed, and his descendants. In their desperate hope and fight against the later caliphs, whom they regarded as unlawful usurpers, they have clung to the expectation of a redeemer who will crush injustice and reinstate the true spirit and power of Islam under its lawful head. They believed that one of 'Ali's descendants, whom they preferred to call imam, or spiritual leader, instead of caliph, has hidden himself away and will return one day as imam Mahdi. Shiite sects were often constituted according to the belief in the particular descendant of 'Ali who is expected to return as a deliverer out of his hiding. Thus there are, for instance, believers in the seventh and in the twelfth descendant of 'Ali as the imam Mahdi.

The imam is in the doctrine of the Shiites a being of more than human qualities, the "golden link between God and men." He is free from all sins and is infallible. Some Shiite sects have even seen in their imam and Mahdi forms of divine appearance. The imam Mahdi is a source of all knowledge and the goal of all longing. Even in the Sunna literature the Mahdi has been surrounded with much poetic and mythological speculation. As in later Judaism pious authors tried to calculate the date of his coming by cabalistic interpretations of certain parts of the Koran. It has been generally accepted that the Mahdi as fulfiller of Mohammed's prophecy has to come from the prophet's family and to bear his name, Mohammed ibn-'Abdallah. But the Mahdi was never considered otherwise than as a guardian of the teachings of Mohammed, which have been corrupted by human inadequacy: he was not considered the prophet of a new salvation superseding or altering Mohammed's doctrine and laws.

There is also to be found an equivalent to the Jewish pseudo-messiahs in Islam. Many mahdis appeared in Moslem history, particularly in Morocco and India, and tried to legitimize or sanctify their political or personal aspirations by assuming the role of a Mahdi. Often they personified the popular hopes of oppressed or disillusioned races or sects. Some declared themselves as mahdis; several were proclaimed as such by their followers; others proclaimed themselves only as forerunners of the Mahdi. Few have had any great importance or produced lasting effects. The most important examples of mahdism in history were al-Mahdi 'Ubaidallah, who founded the dynasty of Fatimites; Mohammed ibn-Tumart, a Berber of north Africa; and Mohammed Aḥmad ibn-Saiyid 'Abdallah, the Mahdi of the Sudan.

The Mahdi idea and the Mahdi movements occupy an important place in Islam, but they have never attained either in profundity of thought or as a historical force the great and lasting significance which messianism exercised in Judaism and in the Christian Occident. With the penetration of secularism and critical rationalism into the Moslem countries mahdism is bound to lose its importance in the religious as well as in the political field.

HANS KOHN

See: RELIGION; RELIGIOUS INSTITUTIONS; JUDAISM; CHRISTIANITY; ISLAM; CULTS; SECTS; MYSTICISM; MYTH; NATIONALISM; DIASPORA; CHASSIDISM; ZIONISM; PROGRESS.

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MESTA. *See* WOOL.

METALS

ANCIENT, MEDIAEVAL AND EARLY MODERN. As the use of tools is one of the marks which distinguish man from the lower animals, so the use of metals may be regarded as a milestone on the road from savagery to civilization. Any approach to modern civilization would have been impossible had the working of metals not been discovered, although complex social systems, far from contemptible in art and ethics, have been evolved in many parts of the world, at widely differing dates, without knowledge of metals. For unknown thousands of years men depended for their tools and weapons upon stone and wood and bone, all of which they learned to handle with great skill. Gold was the first of the metals to be utilized. One of the most widely distributed of all metals, it is found in a pure state, requiring no skill to reduce it from its ore, is easily shaped by hammering with stones and retains its glitter untarnished. But its softness renders it valueless for practical purposes, and its discovery therefore had no inherent evolutionary importance. It is highly probable, however, that the erroneous identification of native copper, which is sometimes found pure in lumps of considerable size, as a kind of gold led to attempts to fashion this material into ornaments. As copper becomes hardened by hammering and can be brought to a sharp edge, it must soon have been discovered that here was a substance with infinitely greater possibilities than stone for the making of tools and weapons.

The next step was the discovery of smelting, which must have been accidental; presumably camp fires, built round with stones containing copper ore, would from time to time reveal runlets and lumps of copper among the ashes, until at last it dawned upon men's minds that this valuable material could be obtained by heating such stones. Once such an idea had been grasped, the quantity of copper available would be enormously increased, as deposits of copper ore are vastly more common than lumps of native copper. Moreover these deposits frequently contain such impurities as antimony, zinc or especially tin, the presence of which converts the smelted metal into a form of bronze, which is harder than pure copper and more satisfactory for mechanical purposes. While this superiority must have been obvious at once, its cause would not be suspected; and generations of observation and experiment must have been required before the development of deliberate manufacture of bronze from an adjusted mixture of copper and tin.

Excavations suggest that objects of copper were known in Mesopotamia and Egypt before 4000 B.C. and that bronze of a kind was produced by the accidents of smelting in Asia Minor, and possibly in mid-Europe, about 2500 B.C., the general date accepted for the beginning of the true bronze age in Europe being about 2000 B.C. (Among the Mexicans and Peruvians the bronze age came much later than in Europe, but it possessed the same general characteristics.) One great bronze center at this time was

at Hissarlik, more famous as Troy, on the Dardanelles; the ships of the Cretan traders carried the bronze throughout the Mediterranean, probably bringing back tin from Spain for its manufacture. Trade routes across Europe had been developed centuries before this, as is shown by the presence of Baltic amber in early Egyptian tombs; and bronze speedily found its way even to distant Britain, while eastward the secret of its preparation penetrated as far as China in the course of the next two centuries. Bronze, however, did not replace stone for common use; it was always costly and practically confined to the weapons and ornaments of the wealthier classes; even in the army of Xerxes (490 B.C.) some of the contingents were armed with spears and arrows tipped with horn and stone.

The tomb of Tutankhamen has revealed the prodigious metallic wealth of Egypt in 1350 B.C. Among the splendors of gold, copper and bronze was one very significant object, lying close to the body of the king —a dagger with a blade of iron. Isolated discoveries have been made in Hissarlik, Mesopotamia and Egypt of iron objects—usually beads and ornaments —dating back at least as far as 3000 B.C., but the metal was clearly of great rarity; and all this early iron may safely be assumed to be meteoric. Practically the only form in which native iron is ever found is in lumps which fall from the skies. Such meteoric iron is malleable and, because of its nickel content, of high quality, resembling steel. Evidence, literary as well as archaeological, shows that this material was used and highly valued. Its celestial origin may partly account for the supernatural properties attributed to iron. In folklore, particularly of northern Europe, iron has a talismanic value. The horseshoe is lucky not merely because of its shape, but also because it is of iron. Fairies, trolls and evil spirits of all sorts are powerless in the presence of iron.

The coming of the real iron age (about 1200 B.C.) gave a great advantage to those races which first exploited the new metal, an instance of which may be seen in the Old Testament story of how the Philistines kept the Hebrews in subjection in the days of King Saul by not allowing them to have weapons of iron or even smiths in their country. Many writers have found it difficult to believe that so long a time should have passed between the first smelting of copper and the smelting of iron —a metal of which the ores are spread more widely and are more easily reduced than those of copper. But Rickard has pointed out that, while copper ore accidentally reduced in a camp fire would yield an obvious shining metal, iron ore would produce a lump of uninteresting black matter, coated with slag, which would reveal its value only with hammering. On the whole, it seems probable that iron smelting was the result of experiments with ores, such as hematite, which the workmen judged from their weight to be metallic and which they very likely thought would produce copper.

Iron as at first produced, although it was an advance over bronze, was still too soft; but by the time of Homer the smiths had discovered how to harden it by quenching the hot metal in water and had also found that it could be case hardened by heating in contact with charcoal. Iron was in general use all over civilized Europe by the time of the Roman Empire. Despite their considerable manufactures of iron and steel the Romans imported steel from India, where the ironworkers of Hyderabad manufactured steel of a high quality from a very early date. This was the "Seric iron" to which Pliny alludes.

The primitive method of smelting ores of copper, tin and iron was to form a shallow, bowl shaped hole in the earth and line it with clay. Here a fire of wood and charcoal was kindled and alternate layers of washed and broken ore and of fuel were heaped over the fire, to which additional draft was supplied by bellows, usually worked with the feet, with a clay nozzle resting on the edge of the bowl. The metal accumulated at the bottom of the hearth and, after the fire and slag had been raked aside, the molten tin or copper could either be ladled into molds or taken out as a solid lump. The heat obtained in this type of hearth was not enough to render iron fluid, so that cast iron was not obtained except by accident. Therefore the lump of viscid iron, with slag and other impurities adhering to it, had to be wrought by laborious hammering and reheating. These simple methods remained in use in Japan until fifty years ago and are still employed by natives in Africa and elsewhere.

Similar methods were used also for smelting lead, a metal which must have been known from very early times, for while it is not found in a free state, its commonest ore, galena, is noticeable from its weight and glitter and is easily reduced. But since lead is too soft for practical use and possesses little merit except weight and easy fusibility, it was employed chiefly for weights and missiles and for such purposes as fastening iron clamps into buildings and in later

times for pipes and roofing. In early times it was important chiefly because it almost invariably contained silver, which, having a much higher melting point, could be extracted by volatilizing the lead, so that much lead was destroyed for the sake of its silver content. Although native metallic silver is often found on the American continent it was much rarer in the Old World, and, as it was from early times valued next to gold for decorative purposes, the ores containing it were eagerly exploited. In Asia Minor and Mesopotamia silver was in use almost as early as copper, but in Europe it was very rare until the later iron age, except in districts, such as Spain and Hungary, where the ore was particularly abundant. Some of this early silver may have come from outcrops of cerargyrite (silver chloride), which is easily reduced by charcoal; but most of it was derived from galena ores by cupellation. The galena was first roasted on an open hearth and then smelted in the same type of furnace as that used for copper. To extract the silver from the lead so obtained a refining, or cupellation, hearth was formed, consisting of a shallow concave hearth lined with bone ash or other absorbent material. A charcoal fire was kindled, on which the lead was placed; when it was molten, the fire was scraped aside and a blast of air directed on to the lead, which was thus converted into oxide, or litharge. The litharge was partly scraped off and partly absorbed by the bone ash, leaving the silver; the litharge was subsequently resmelted to obtain the lead.

The ancient world, including India and China, attained great proficiency in the working of metals. Artists used their skill in the making of gold and silver plate, jewelry and other objects. Statues of enormous size were cast in bronze. A process was perfected by which bronze was hardened and hammered into extremely sharp cutting edges. Smiths, increasingly improving their craft, produced better and cheaper swords, spears, hooks, scythes and other implements of war and peace—but particularly of war. There was a corresponding improvement in the tools used for the working of iron. Roman Italy gradually became the great center of metal manufactures.

The stimulus given to trade by the discovery and working of metals can scarcely be overestimated. Countries requiring metal and metal products could obtain them, apart from plunder, only by giving in exchange other articles of their own growth or manufacture. The first of the great traders on the Mediterranean were the Cretans, who from about 2000 to 1400 B.C. carried oil, wine, corn and other products of their island and accumulated vast quantities of gold, which their goldsmiths wrought into goblets, cups and jewelry of unsurpassed beauty. Their rivals and successors were the Phoenicians, whose cities of Tyre and Sidon became the great centers of trade from about 1200 to 700 B.C. The first of their ships to reach Spain obtained such masses of silver that they replaced the lead of their killicks with the precious metal. In 1100 B.C. the Phoenicians founded a colony at Gades (now Cádiz) in the district of Tarshish and exploited the metallic wealth of Spain. More than a century later their king Hiram was supplying David and Solomon with gold for the adornment of the Jewish temple in quantities so great that Solomon in return made over to Hiram fifty "cities," or villages. This gold came from the mysterious "Ophir," which seems to have been Arabia or Abyssinia. The Phoenicians were bold sailors; their ships reached India in the east, sailed on at least one occasion round Africa and appear even to have penetrated to the Baltic. They traded for tin with the natives of the Cassiterides, or Tin Islands, by which Cornwall appears to have been meant. It is not certain, however, that the Phoenicians made a practise of going there themselves; it is more likely that the natives shipped the tin to Corbilo, at the mouth of the Loire, whence it was carried down the Garonne and so to Narbonne, as was certainly done in later times. After Tyre and Sidon had been crushed by Persia in 538 B.C., the Phoenician colony of Carthage on the bay of Tunis became mistress of the sea. Its power was founded on the wealth wrung from the mines of Spain and Sardinia by the most ruthless use of slave labor; and it was chiefly the desire to seize that wealth that made the Romans, whose own country was poor in metals, enter upon the bitter struggle which ended in the annihilation of Carthage.

Meanwhile somewhere about 700 B.C. there had occurred in Asia Minor an event of great economic importance—the first definite issue of coins (*see* COINAGE). The first issuers of coins are believed to have been not kings but wealthy traders; the distinction between kings and financiers was not sharply drawn, for there is good reason to think that the early tyrants of the Levant were merchant princes, men who grasped the possibilities of the invention of a new metal currency. Such were Midas, whose fabled touch

turned all things to gold; Croesus; Polycrates, tyrant of silver bearing Siphros; and Peisistratus, who made himself tyrant of Athens with the help of the mines and miners of Laurium. Even in later times the Macedonian dynasty of Alexander the Great owed its rise to the mines of Thrace; and the Attalid kingdom of Pergamum, where Greek art flamed up for the last time before its extinction, was based on mineral wealth. In the later days of the Roman Empire the precarious position of emperor was more than once openly sold to the highest bidder; its pale shadow, the crown of the Holy Roman Empire, was bought in 1257 by Richard, Earl of Cornwall, with wealth derived from English tin mines; and if the great firm of Fugger wore no actual crowns, the money they drew from mining ventures in Germany and the Tyrol enabled them to seat Charles V on the imperial throne, not without profit to themselves. The course of history was changed when at Salamis the navy of King Xerxes was shattered by the ships of Athens, built with wealth derived from the state mines of precious metals of Laurium. In addition gold and its coinage greatly influenced commerce.

It is not easy to estimate the influence of the non-precious metals in history. Obvious though it may seem that weapons of bronze are superior to those of stone and weapons of iron to those of bronze, the personal element is so much more important than the material (or was before the advent of firearms) that it is doubtful if any ancient kingdom owed much to the superior material of its arms. A strong man with a club may be a match for the unskilled wielder of the finest blade ever forged in Toledo; and King Pyrrhus, after staggering the armies of Rome, was killed by a well aimed brickbat. The swords of the Britons may have bent upon the shields of the Roman invaders, but it was the discipline rather than the weapons of the legionaries that gave them victory. So far as iron affected warfare it was chiefly in the development of body armor, which in course of time permitted the knights to achieve honor at very little risk to their lives and restricted bloodshed to the humbler ranks, until undiscriminating gunpowder restored the balance. In the arts, while the sculptures of Phidias or Michelangelo could not have been achieved without the chisel, the carvings executed without metal tools by the early Egyptians, the pre-Columbian natives of Central America and such races as the Maori suggest that art is not wholly dependent on steel. It is easier to see how the metals lent themselves to the service of art in the exquisite goldsmithry of Egypt and Chaldea and thirteenth century Europe, the ironwork of Moorish Spain, the brass of India and the bronzes of China, Japan and Renaissance Italy. But it is in the humble sphere of everyday life that iron has played the greatest and most beneficent part. Iron plowshares, spades, axes, horseshoes and nails did more to raise the standard of human life than all the swords of Damascus and sculptors' chisels ever forged. The village blacksmith was the outstanding craftsman in the mediaeval manorial community, and his just pride in his craft is reflected in the number of families which adopted Smith as their surname.

The fall of the Roman Empire was accompanied by a decline in metallurgy, which, however, continued to flourish in Byzantium. There was nevertheless some progress in smelting during the Middle Ages; it became customary to build over the hearth a low tower of stone in the shape of a truncated cone, like a limekiln, the open top of which served to charge the furnace and as a vent for the fire. About the middle of the fourteenth century water power for driving great bellows was increasingly used in Spain and Belgium, spreading to Germany and England in the next century. This enabled a much fiercer heat to be obtained and it became possible to produce cast iron, which could be run out from the bottom of the hearth and cast in "sows" and "pigs." Such iron was too brittle for most purposes and had to be reworked in the forge under a water driven hammer. All through the Middle Ages there was a demand for a variety of steel yielded by the manganese iron ores of certain regions, such as Spain and Sweden. Tools were never made wholly of steel because of its high cost, but a piece of steel was welded on to the iron to form its edge. Weapons of better quality were forged from steel, the armorers of certain districts, notably Cologne, Milan and Toledo, acquiring fame and wealth from their skill. Still earlier the swords of Damascus had earned a great reputation. There were many improvements in the large variety of tools, including sledges and modeling hammers used in metal working. The Renaissance gave a great impetus to artistic metal work both in bronze and iron; architecturally iron was first used for protective and later for decorative purposes, receiving the highest artistic expression in Spain. Germany developed a considerable export of iron implements. During the fifteenth

and sixteenth centuries the mining of metals increased greatly; it was stimulated particularly by the demand for firearms, the manufacture of which resulted in great technical improvements in ironworking.

The increase of trade during the thirteenth century necessitated a gold coinage. Florence struck gold florins in 1252, Venice followed with ducats and sequins in 1286; France issued a gold coinage in 1295 and England in 1345. The chief sources of gold were now the mines of Silesia and the neighborhood of the Black Sea, while silver was obtained from Bohemia, Hungary, Tyrol, the Harz mountains and elsewhere. All through the Middle Ages the rulers of Europe scrambled for bullion for their mints; attempts were made even to provide it by alchemy, the transmuting of lead into gold, but no gold was produced, although in the course of the search alchemy itself was transformed into the nobler science of chemistry.

The continued attrition of bullion, by export to the East and by conversion into plate and jewelry to meet the luxurious ostentation of the Renaissance, was one of the chief motives for the attempt to find a sea route to the fabulously rich gold lands of "Cipango" and "El Dorado," which resulted in the discovery of the continent of America. The first period of the conquest of Mexico and Peru was one of simple plunder. The cargoes of bullion which flowed into and through Spain were the product of ornaments found in the palaces and graves of the chiefs. The natives attached no commercial value to gold and silver and could not understand the madness of men who seized their beautiful ornaments only to destroy them by melting them down. When these supplies of gold and silver ran short, the Spanish invaders began to exploit the mines with the forced labor of the natives and later of Negro slaves. During the first fifty years after the discovery of America some $85,000,000 of bullion—mostly gold—was sent to Spain. Then came the opening of the silver mines at Potosí, in which a new process of extracting the metal by amalgamation with quicksilver was employed, to the enrichment of the Fuggers, who had leased the quicksilver mines of Almadén in Spain, the only important deposits of that substance then known. The average annual yield of Potosí was about $20,000,000. It has been calculated that the stock of monetary metal in Europe rose from $175,000,000 in 1492 to $650,000,000 in 1600.

The natural result of this flood of coin was to send prices leaping up and to give a great impetus to the development of trade and manufacture, bringing down in ruins many social and industrial survivals of the feudal past. The mines of Europe shared in the boom. In England under Henry VIII and again under Elizabeth German miners were called in to organize the copper mines; in Russia about the same time the mines of the Urals were exploited under German and English direction; and when the Strogonovs conquered Siberia in 1574 they received a grant of the gold and silver mines, and by 1584 they were employing 15,000 miners. In Germany itself mining reached a high degree of skill. But the increased output of ore meant an enormous consumption of wood for fuel; many districts were completely denuded of their timber, with disastrous results in the reduction of rainfall. In England the security of the country was threatened by the destruction of oak required for building the navy, and no multiplication of iron cannon could compensate for lack of ships in which to mount them. The remedy lay in discovering some way in which mineral coal could be used for smelting iron, and this was finally accomplished about 1709 by Abraham Darby (*see* IRON AND STEEL INDUSTRY). The revolution in metallurgy was a decisive aspect of the industrial revolution, whose technology made great demands upon metals, particularly iron.

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MODERN. Economic developments after the industrial revolution made great demands upon metals. While the greatest demand was for iron —the world output of pig iron rose from 460,000 tons in 1800 to nearly 100,000,000 tons in 1929— other metals also became increasingly necessary; in the same period the output of copper rose from approximately 18,000 tons to 1,900,000 tons, of lead from 24,000 tons to 1,788,000 tons and of zinc from 582 tons to 1,460,000 tons. The growth of metal consumption has been especially great in the past fifty years; thus the value of metal production in the United States rose from an annual average of $191,000,000 in the years 1881 to 1885 to $1,476,000,000 in 1929. Machinery and other types of industrial equipment, railroads, steamships and bridges, new forms of construction, all absorbed continuously greater supplies of metals; and the demand was strengthened by an increasing and varied production of metal consumption goods. Electricity augmented immensely the use of

copper, while the development of industrial chemistry called for large supplies of "chemical metals." These changes were accompanied by progress in extractive and refining methods; the advent of new processes, such as electrometallurgy; improvements in the quality of metals, particularly in the form of alloys; and the discovery and technological utilization of many new or rare metals, such as vanadium, tungsten, manganese, nickel, chromium and aluminum. Industrialism may aptly be called a metal economy.

In their modern technological uses metals may be classified into three major groups: structural metals, power transmission metals and chemical metals. The lines of demarcation, however, are not always clearly defined. Copper, the most important metal in power transmission, is used also as a structural metal. Iron, the major structural metal, can be employed for power transmission, as it was in Europe during the World War, when copper was scarce. Silver, which has the highest electrical conductivity, is never used for power transmission because of its cost and the comparatively small amount produced. Many "rare" metals are employed much more as chemical compounds than in their elemental metallic forms. Nevertheless, the technological classification according to use is substantially correct and of practical importance.

A metal passes through many stages before it reaches its final form. The mining and preparation of the ores are followed by smelting, which in the case of many metals is divided into a number of phases, and then by refining, which is being increasingly accomplished by electrochemical and electrothermic methods. The metal is then worked into semifinished and finished products. Compared to the processing of other industrial materials, such as wood, the treatment of metals is relatively complicated and protracted. The length of processing also affects the economic importance of metals, which is considerable even before the metal is worked at all. The many auxiliary industries involved require apparatus and machinery on a large scale: ore mining equipment, smelting and refining furnaces, huge electrolytic plants, rolling mills and foundries and the frequently enormous machinery used in the manufacture of finished metal products.

Mining and production of metals are very widely distributed, a fact which complicates the problem of location. This problem involves very different factors in various countries; it is therefore impossible to fix a common economic denominator for the world's metallurgical industries. It is obvious that antimony mining in China, for example, is carried on under wholly different economic, technical and geographical conditions from those in the United States. The United States moreover not only consumes its own antimony output but also imports appreciable quantities of Chinese antimony. Thus the history of two blocks of metal may be very different, although there is no difference in their chemical or physical properties. The differences in origin are "burnt out," as it were, in the fire of the smelting process, but their economic importance remains a significant fact.

The problem of location involves a choice between centralized and decentralized smelting. There is a powerful trend toward the establishment of highly centralized smelting plants. The location of these plants is not, however, always determined by purely economic considerations; frequently there are considerations of military and governmental power. The advocates of decentralized smelting assume that wherever possible only the most valuable materials should be transported; in other words, that no raw materials containing high percentages of worthless matter should be shipped. Raw ores often contain only an extremely small proportion of the requisite metal, and the shipping of such ores involves heavy loading and transportation charges. It follows therefore that every mine, or at least every mining area, should be equipped with the necessary smelting plants; only the finished metal should be transported long distances. This procedure is, however, followed in but relatively few cases; ordinarily the ores are merely sorted or reduced to concentrates with a comparatively high metal content, thus diminishing useless freight handling. Basing their argument upon the present stage of development the advocates of centralized smelting maintain that it is much more advantageous to erect large smelting plants in the major consumption areas, thus supplying the market directly with the finished metal, and that this more than outweighs the disadvantages of the admittedly high freight wastage. The advocates of centralization are stronger today than their opponents, whose influence is, however, far from negligible. The problem of whether smelters should be erected in the mining areas or in the major areas of consumption is being affected more and more by the question of power supply. With the growing use of electricity in electrolytic metal refining the decisions

as to location are being increasingly affected by the availability of power. When the Aluminum Company of America, for example, erected the largest aluminum plant in the world on the Saguenay River in Canada and not in the United States, it did so largely because of an abundant supply of cheap power. The availability of cheap hydroelectric power has made Norway an important producer of aluminum, although that country has no other resources for producing the metal. Surplus power will probably lead to the establishment of a huge electrolytic zinc plant in Magdeburg, Germany. The problem of power is not governed, however, solely by hydroelectric considerations. In many cases, as in Germany, brown coal, or lignite, is still the cheapest source of electric power. When the power problem is cited for or against centralized or decentralized smelting, this can never be considered as a matter of principle but must always be related to the particular conditions under which the cheapest possible method of metal production is sought. Neither transportation nor power alone decides the location of smelting plants.

Available metal resources have played an important part in the tempo and degree of a country's industrialization; countries deficient in metals, such as Italy, have lagged behind, while abundant resources of nearly all the basic metals have constituted an important factor in the intensive industrialization of the United States. At first the more industrialized countries exploited primarily their own metal deposits; then, because of diminishing domestic supplies or in order to obtain metals unavailable at home, they began to draw upon other countries. The trade in metals acquired an increasingly international character, and metals more and more were traded on a futures basis on the exchanges in London, New York, Berlin and Hamburg. Rapid growth in the output of metals has been accompanied by more or less chronic overproduction with frequently disastrous effects on prices and profits.

Iron. The "iron investment" of the world has advanced tremendously during the past fifty years. This investment depends upon ever larger demand and the effective duration of iron in use, especially upon the proportion of losses due to corrosion and other causes. It is estimated that iron and steel used in industry as a whole become scrap after twenty to twenty-five years. The life of iron varies according to the uses to which it is put and is being prolonged by improvements in manufacture and utilization. In the field of railroads, for example, the durability of rails and ties has been considerably increased; in addition old rails and ties are often used as supporting material in mines. Bridges last much longer than twenty-five years, as do other structures, such as blast furnace hoists, while the effective life of machinery also has been increased.

Only in railroad construction has the consumption of iron shown no upward trend in recent years. This was to be expected, as the railroad network of the highly industrialized countries had reached so high a stage of development even before the World War that new construction could no longer proceed at the former rate; and the slowing down has since been seriously affected by the competition of automobiles. The industrialization of such countries as India, China and, above all, Soviet Russia will again increase the world consumption of iron for railroad construction, although these countries may be able to meet their own iron requirements to a surprisingly great extent. Iron consumption, however, continues to grow in other than the railroad industry. There are close links besides consumption between the iron and other industries; thus in some countries combination has proceeded to the point where certain iron and steel concerns, for example, the Skoda works in Czechoslovakia, manufacture automobiles, supply them with fuel (benzol produced from by-products of coke ovens) and furnish tar for road construction.

The principal raw materials of the industry are iron ore, iron scrap, coke and various kinds of lime products. Old dumps of slag rich in iron from bloomery hearths, refineries and puddling furnaces are also smelted. Other raw materials are the residues of sulphuric acid manufacture from iron pyrites as well as residues of coal tar dye manufacture (iron oxides); each of these materials has an iron content ranging from 55 to 65 percent. The most important raw materials, however, are iron ore and scrap.

Since 1913 there have been no important changes in the production of iron ore, except for the decline of the German and the rise of the French output as a consequence of the acquisition of the Lorraine reserves by France (Table 1). In most countries the iron ore deposits are largely controlled by the iron and steel concerns. Both the United States Steel Corporation and the Bethlehem Steel Corporation own iron deposits at home and abroad (Cuba, Brazil, Chile). In 1928 the ore mined by United States

TABLE I

PRODUCTION OF IRON ORE, 1913–30
(In millions of metric tons)

	1913	1928	1929	1930
United States	62.9	63.2	77.4	59.3
Cuba	1.6	0.4	0.7	0.2
Chile	0.01	1.5	1.8	1.7
Newfoundland	1.5	1.6	1.5	1.2
Germany	35.9	6.4	6.3	5.7
France	21.9	49.2	50.7	48.5
Luxemburg	7.3	7.0	7.5	6.6
Great Britain	16.2	11.4	14.0	11.8
Spain	9.8	5.7	6.5	5.5
Sweden	7.4	4.6	11.4	11.2
Russia	9.5	5.8	7.2	10.1
India	0.3	2.0	2.4	1.9
China	0.9	2.0	1.7	1.7
Algeria	1.3	1.9	2.2	2.2
Czechoslovakia	—	1.7	1.8	1.6

Source: Germany, Statistisches Reichsamt, *Statistisches Jahrbuch fur das Deutsche Reich, 1932* (Berlin 1932) p. 55*.

Steel from its own mines and mines under its control totaled over 26,000,000 metric tons, or more than 40 percent of the aggregate American production of 63,200,000 tons. The ownership or control of foreign mines is general among the iron and steel concerns of the highly industrialized nations. German concerns had large interests in the Spanish iron ore fields before the World War; but during the war most of these passed into the control of British corporations, which now dominate Spain's iron ore mining. There are minor German interests in Sweden and Norway. The Swedish ore trust (Grängesberg-Trafik A.B.) is controlled in part by the government, and this control may eventually become complete through contractual transfer of shares to the government. The Swedish interests are indirectly involved in several north African mines, which are otherwise controlled by French corporations. There are no international iron ore agreements, but iron and steel concerns without enough ore of their own usually have long term contracts with foreign mines.

Because of the world's uneven industrialization and distribution of iron reserves there is a considerable foreign trade in iron ore. In 1929 seven countries imported 46,435,000 tons of iron ore, the major importers being Germany, 16,953,000 tons; Belgium, 14,125,000 tons; England, 5,780,000 tons. The major exporters were France, 16,405,000 tons; Sweden, 10,899,000 tons; Spain, 5,595,000 tons. The United States imported 3,190,000 tons and exported 1,325,000 tons.

Since the beginning of the present century production of steel in the open hearth furnace has helped to make possible the reemployment of old iron, or scrap. Scrap is highly prized, not only because of its comparative cheapness but also because as a raw material it is in most cases practically pure metal. Scrap iron is of the greatest importance in countries with little ore of their own, such as Germany and Italy. It is also used in huge quantities in the United States, despite the country's abundant ore; the American railroads alone, which are six times as great as the German lines, supply tremendous quantities of scrap. In addition there is the scrap obtained from house and factory wrecking, which is done on a much larger scale in the United States than in Europe, from the annual replacement of millions of old automobiles and from other sources. In Europe the scrap surplus countries, under normal economic conditions, are France, Scandinavia and England; while Germany, Italy, Poland and Czechoslovakia are large scale importers. Germany is one of the largest scrap consumers in the world. Despite its large surplus France has put scrap exports on a quota basis, most of its exports going to the Italian market. Czechoslovakia, Poland and Austria have all imposed strict prohibitions on scrap exports. Scrap is traded in internationally on a large scale; its prices are much more subject to fluctuation than the prices of iron ore, which are usually fixed by long term contracts.

The production of pig iron, obtained from the two raw material constituents, ore and scrap, has risen markedly during the past decades, keeping step with technical and economic advances. The course of the foreign trade in pig iron during recent years has been characterized by the severe export losses of Great Britain and Germany and the gains of France and India as compared with pre-war figures. It is significant that for some years British India has been able to export much more pig iron than Britain, which only a few decades ago almost dominated the world market. Europe and the United States will find it hard to combat this development even with the aid of protective tariffs. During recent years India's exports to Germany, Britain and the United States have grown to unprecedented proportions despite all tariffs and anti-dumping measures. Another important development is the fact that Japan, hitherto the largest importer of Indian iron, is depending more and more on its own exploitation of Manchurian iron ore deposits; so that it is likely that Indian iron will be shipped to Europe and America in increasingly larger amounts.

Copper. Among non-ferrous metals the production of copper ordinarily exceeds that of any other metal. In 1880 the world production of copper totaled only 225,000 metric tons. In 1929 the mining output of copper was 1,941,000 tons (Table II), an increase of nearly 1,000,000 tons over 1913, although in 1921 the world output declined to 527,000 tons. On a continental basis the changes are extremely significant. While the European output rose only slightly, that of the other continents, particularly South America, increased greatly. Of the individual countries the United States experienced the largest gain in output.

The principal sources of copper are copper ores, copper pyrites, copper waste and all sorts of scrap copper. Compared with iron ore the metal content of copper ores is extremely low, most ores containing only from 1 to 3 percent of metal, while few ores have more than 6 percent. Whether it pays to work copper deposits does not depend primarily upon the copper content (which must not of course fall below a certain minimum) but upon the geographical location, possibilities of extraction and chemical composition of the ore. Ores of very low metal content, which can easily be concentrated, are more profitably worked than ores with a some-

TABLE II

PRODUCTION AND CONSUMPTION OF COPPER, 1913–30
(In thousands of metric tons)

	MINE PRODUCTION				SMELTER PRODUCTION				CONSUMPTION, CRUDE			
	1913	1928	1929	1930	1913	1928	1929	1930	1913	1928	1929	1930
Spain	44.9	54.2	63.7	58.4	24.0	20.6	21.3	16.2				
Germany	26.8	26.8	29.1	27.2	41.5	48.5	53.6	59.2	259.7	253.7	216.4	185.8
European Russia	33.7	18.0	25.0	30.0	34.3	18.2	25.0	30.0	40.2	48.6	55.1	55.0
Great Britain	0.4	0.1	0.1		52.2	15.5	17.2	17.4	140.4	158.6	153.8	150.6
Italy	2.1	0.8	0.9	0.9	2.1	0.8	0.5	0.3	30.9	77.2	55.0	50.9
Sweden	1.0	0.6	1.1	0.8								
Austria*	4.1	3.0	2.1	2.2	4.1	3.4	3.9	4.1	39.2	17.8	17.1	12.3
France					11.9	1.2	1.4	2.0	104.5	130.9	143.9	132.0
Belgium									15.0	30.0	30.0	38.1
Jugoslavia	6.4	15.1	20.7	24.5	6.4	15.1	20.7	24.5				
Norway	10.6	15.8	19.1	17.3								
Other countries†	4.9	7.5	11.3	11.7	10.6	17.9	20.9	30.6	14.3	91.6	87.6	91.1
Europe	134.9	141.9	173.1	173.0	187.1	141.2	164.5	184.3	644.2	808.4	758.9	715.8
United States	555.4	820.9	905.0	639.6	600.6	911.4	998.8	706.3	322.9	780.6	865.3	631.7
Mexico	52.8	65.5	86.6	73.4		45.9	57.9	53.1				
Canada	34.9	91.9	112.5	137.7		56.6	72.7	101.6				
Cuba	3.4	17.1	14.3	16.3								
Chile	42.3	289.9	316.0	222.0		277.4	303.2	208.0				
Peru	27.8	53.0	55.6	47.6								
Bolivia	0.9	8.5	7.2									
Argentina	0.1			5.0								
Other countries†	0.7				110.1	52.3‡	54.4‡	47.5‡	15.9	22.0	27.5	24.5
America	718.3	1346.8	1497.2	1141.6	710.7	1343.6	1487.0	1116.5	338.8	802.6	892.8	656.2
Belgian Congo	7.5	112.5	137.0	138.9								
Rhodesia		5.5	6.5	7.9								
Other countries†	15.8	19.8	20.9	20.5								
Africa	23.3	137.8	164.4	167.3	10.4	126.3	150.1	150.8	3.0	3.5	3.5	3.0
Japan									24.5	79.9	70.4	69.0
Other countries†									17.2	7.5	8.0	8.0
Asia	66.7	83.9	93.7	101.2	66.5	71.6	81.8	87.5	41.7	87.4	78.4	77.0
Australia	47.2	9.6	13.0	13.2	43.8	12.0	11.0	15.1	14.0	8.0	8.0	5.8
World total	990.4	1720.0	1941.4	1596.3	1018.5	1694.7	1894.4	1554.2	1041.7	1709.9	1741.6	1457.8

* Austria-Hungary in 1913.
† Includes countries for which no specific information is given above.
‡ Chiefly Peru.
Source: Metallgesellschaft, Frankfurt a.M., *Statistische Zusammenstellungen uber Aluminium . . .*, vol. xxxi (1930) 9–11, vol. xxxiii (1932) 9–11.

what higher metal content, which must be smelted directly. The smelting of copper ores and pyrites has been steadily improved. Usually the ores are first subjected to a process which removes the chemically worthless constituents. In the past shaft furnaces were used exclusively to smelt the ores, but reverberatory furnaces have been substituted for them more and more during recent years. Working finely divided ores in the shaft furnace requires preliminary sintering, i.e. agglomeration, which involves considerable expense; and it is for this reason that the reverberatory furnace, in which finely divided ores can be smelted directly, has displaced the older apparatus, cutting in half the unit costs. But the reverberatory furnace is profitable only when it is very large; a single furnace requires about 100,000 tons of ore annually for efficient operation. Reverberatory furnaces are used chiefly in the American industry: at the close of 1931 there were in the United States 47 such furnaces with a total annual capacity of some 10,000,000 tons of ore; while only 19 shaft furnaces with a capacity of 3,000,000 tons were still in use, although there were 71 in 1919. In other countries shaft and reverberatory furnaces are about equal in number.

Since the 1890's refining by the electrolytic process has increasingly displaced refining by the use of high temperatures in furnaces. Electrolytic copper plants in the United States in 1929–31 had an annual capacity of some 1,600,000 tons; the Canadian plants can produce about 220,000 tons annually. Outside the United States there are electrolytic copper refineries in Chile, Germany, Russia, Belgium, Australia, Africa and Japan. Great Britain has no electrolytic refinery, although plans for the erection of such a plant were completed as early as 1928. In 1930 the world production of electrolytic copper was about five times that of furnace refined copper. It is not probable, however, that electrolytic refining will continue to gain over the older method. While furnace refined copper is less pure than the electrolytic metal, it is cheaper; and the cost of erecting furnace refineries is but a fraction of that of electrolytic plants. During the crisis years which set in after 1929 the output of furnace refined copper rose, while its competitor declined because of the demand for cheaper copper; this may prove to be a permanent trend.

The theoretical capacity of the world's copper refineries at the end of 1931 was over 3,000,000 tons, computed on the basis of the facilities for refining raw copper as well as resmelted metal. This capacity has never been completely utilized. Smelter capacity is concentrated among comparatively few groups. In the United States the American Smelting and Refining Company directly controls a refining capacity of 590,000 tons in three great plants. The Anaconda concern has its own plant with a capacity of 162,000 tons; it controls the electrolytic refinery of the Raritan Copper Works and owns the two refineries in Chile of the Andes Copper Mining Company and the Chile Copper Company. The American Smelting and Refining Company is closely connected with the Braden Copper Company, which owns a refinery in Chile. Similar interlocking connections exist in the United States and other countries. British interests are now engaged in creating a copper trust with enormous refineries in Canada and Africa, the nuclei of which are the Amalgamated Metal Corporation and the Imperial Smelting Corporation. Sooner or later this trust will be extended by the establishment of new refineries in England itself. Japanese production capacity also is highly concentrated, under the domination of the Mitsui and Mitsubishi interests. In Germany there is less concentration, although there are four dominant concerns, one of which, the Metallgesellschaft, is allied with the Norddeutsche Affinerie, which in turn is closely linked to the British Amalgamated Metal Corporation.

Concentration in the smelting of copper is interlocked with concentrated ownership and control of available reserves of copper ore. Thirty-three companies control some 3,500,000,000 tons of the world's reserves of copper ore, or 73,000,000 tons of the metal on the basis of a 2.09 percent copper content. Ownership and control, however, are much more highly concentrated than would seem to be the case, for most of the copper mining companies are only nominally independent concerns and are dominated by the great smelting corporations. Probably ten groups control the major proportion of the world's available copper ore.

As in the case of iron, the growing use of copper has greatly increased the supply of scrap copper and of all sorts of copper waste. In the United States alone some 166,000 tons of copper were produced by resmelting in 1929, representing more than 15 percent of the refined copper output. In European countries, particularly in Germany with its wholly inadequate supply of copper ore, scrap copper, imported or

domestic, is an extremely important source of raw material for the copper smelters. Copper reclaimed from scrap and waste in the European industry may be estimated to average about 47 percent of the new copper consumed and some 31 percent of the copper smelted from the ore. The corresponding figures for the United States are relatively insignificant.

The consumption of raw copper has increased about 50 percent since 1913 (Table II). The distribution among the different industrial groups in the United States is approximately as follows: electrical products, 22 to 25 percent; telephones and telegraph, 10 to 12 percent; electric power and light transmission, 13 percent; copper wire for other than transmission purposes, 8 to 9 percent; automobile industry, 10 to 13 percent; building construction, 5 to 6 percent; copper castings for machine parts and utensils, 5 to 6 percent; miscellaneous, 8 to 10 percent. Copper used in the manufacture of radio sets amounted in 1931 to 1.5 percent of the raw copper. About 6 to 7 percent of the copper consumed by the United States was exported in manufactured goods. Although this distribution does not prevail in all countries because of differences in industrial development, on the whole it may be said that the electrical industry in its widest sense is the major consuming group as in the United States; second place is occupied by the brass industry; third by copper rolling mills and wrought copper works; fourth by shipyards, railways, foundries and general manufactures; and fifth by the chemical industry and copper sulphate manufacture.

The copper ore reserves and copper production of the world are divided into national, not continental, spheres of influence. Thus Canada's copper reserves do not belong to a general American "sphere of influence" but are included within the British sphere, just as are the areas and the production of Rhodesia or Australia. The American sphere of influence, however, still includes the largest copper ore reserves, while the British occupies second place (Table III). Ore reserves of the British sphere represent mainly new workings, and large reserves may be discovered. This is unlikely in the United States, whose ore fields are thoroughly prospected and are gradually being exhausted. Important finds are unlikely also in South America. Since the Union Minière du Haut Katanga pursues a policy very similar to that of the British, it is safe to assume that from the standpoint of reserves the resources of the American and the Anglo-Belgian groups are almost equal. As for the other "neutrals," it is unlikely that the European deposits, outside of those in the Soviet Union, will yield any great output. Year by year the exploitation of these deposits is becoming increasingly difficult despite all technical advances.

The fact that copper is traded on a futures basis naturally affects the movement of prices, but it is not as determinant as certain groups of producers have apparently assumed. When Copper Exporters, Inc., was organized by the great producing interests to control prices it eliminated as much trading in copper as possible, direct dealings between producers and consumers being one of the major aims of the stabilization efforts of the international copper industry. The hostility of the great producing interests to the exchanges greatly reduced their turnover, but the effort to control prices was only partly successful. Before the founding of Copper Exporters, Inc., the difference in price between standard (raw) copper and electrolytic copper in the form of wire bars, cathodes and the like averaged from £6 to £7 per ton and was practically constant. But when Copper Exporters maintained prices unchanged at 18 cents per pound, or £84.10.0 per ton, from April, 1929, to May, 1930, despite the rapidly spreading depression, the price of standard copper in London dropped as much as £25 per ton below the price

TABLE III

DISTRIBUTION OF CONTROL OF THE WORLD'S COPPER RESERVES
(In thousands of tons of copper content)

BRITISH "SPHERE OF INFLUENCE"		AMERICAN "SPHERE OF INFLUENCE"		"NEUTRALS"	
COUNTRIES	AMOUNT	COUNTRIES	AMOUNT	COUNTRIES	AMOUNT
Canada	5,300	United States and Mexico	18,000	Belgian Congo	7,000
Rhodesia	19,800	South America and Cuba	20,000	Russia	10,000
Australia	150			Europe (excluding Russia)	4,000
India	50			Japan	4,000
Transvaal	50				
Spain	2,000				
Total	27,350	Total	38,000	Total	25,000

Source: Compiled by the author.

on electrolytic copper. A break in the market may make its way under the cover of an artificially maintained cartel price until even the cover collapses.

Copper Exporters, Inc., has been dominated by the Anaconda Copper Company since its organization in 1926; it included also the Phelps Dodge Corporation, the American Smelting and Refining Company with its mining subsidiaries, Utah Copper and Braden Copper, as well as all the large copper exporting producers in the United States with the exception of the Miami Copper Company. The British Metal Corporation with its Canadian allies and the Union Minière du Haut Katanga likewise joined it. Formally speaking, the activity of Copper Exporters, Inc., applies solely to exports from the United States in accordance with the provisions of the Webb-Pomerene Act. Before its control of world prices broke down, there was no allocation of sales areas but quotas and prices were strictly maintained. The price policies of Copper Exporters, Inc., gave extraordinary impetus to the development of the African mines, a result not envisaged by the founders of the export association and which finally contributed to the collapse of its power. The opposition of European copper consumers to the price dictatorship of Copper Exporters, Inc., became so strong that no effort was spared to dispense with the cartel's supply by the opening up of new sources of copper. At its inception the cartel controlled some 90 percent of the world's copper production; this figure dropped to less than 70 percent by 1930, a development which was in part a result of the world crisis. Copper Exporters, Inc., collapsed in 1932 with the withdrawal of the Union Minière du Haut Katanga, and other foreign producers followed by the withdrawal in 1933 of the American Smelting and Refining Company.

Another consequence of the crisis was the revival of the old conflict between the mine smelters and the job smelters. The job smelters are primarily interested in making as full use of their capacity as possible, while the mine smelters are mainly concerned with keeping the price of copper as high as possible. By repeated threats to resign from Copper Exporters, Inc., the job smelters finally forced the mine smelters to consider business conditions, which were steadily becoming worse. Moreover they found ways to increase their sales at the expense of the mine smelters through more or less open evasion of the cartel regulations, and to influence the market price to their advantage by supplying material exempt from cartel regulations. These conflicts contributed to the gradual disintegration of the cartel, accelerated by an increase in European smelter capacity, the output of which cut sharply into the cartel's sales.

With the imposition in 1932 of the virtually prohibitive United States tariff of 4 cents per pound the copper tariff problem reached a new stage. The mines in the southern states based their tariff demands, rejected for years but finally approved, on the fact that the country as a whole had in 1931 reversed its position from that of the largest copper exporter to an importer of copper; and they therefore claimed that a prohibitive tariff was necessary to keep their plants running. It is doubtful whether the change was merely a symptom of the crisis or was due to more basic causes. The president of the American Metal Company, which is engaged almost exclusively in job smelting, endeavored to prove that it was merely a crisis phenomenon and that a tariff was therefore unnecessary. The idea of a copper tariff spread rapidly in Great Britain, and only two months after the enforcement of the United States tariff the Canadian copper producers forced a decision in Ottawa to establish an "empire tariff" of twopence per pound on all materials containing copper. This tariff is intended to afford protection under which Rhodesian and Canadian copper output may reach the point where the British Empire will produce all the copper it requires. These developments have wiped out the former preeminence of American copper in the European industry. Moreover if the Soviet Union should, as is likely, enter the market with considerable quantities of copper during the next few years, the American position in the world's copper industry will be limited to its own domestic market. This shift in the balance of power would have taken place sooner or later, but there is no doubt that the activities of Copper Exporters, Inc., have hastened it by at least ten years.

Aluminum. Aluminum, the newest of the metals produced on a large scale, is obtained from bauxite ore. When Friedrich Wöhler first produced aluminum over one hundred years ago, the raw material he used was cryolite, a comparatively expensive substance, still employed as a flux in electrolysis. Today the metal is recovered solely from bauxite, although it is technically possible to obtain aluminum from other minerals. Bauxite contains from 55 to 65

percent of alumina (aluminum oxide); the other minerals of course have a much lower alumina content. As much as one quarter of the surface of the earth consists of minerals containing aluminum oxide, and there is practically not a single ore which does not include from 5 to 20 percent of aluminum oxide. Because of the cost, however, the production of aluminum from such minerals is impossible at the present time. Aluminum can be extracted profitably only from bauxite, which has an aluminum oxide content of about 52 percent. The known reserves of bauxite exploitable by present methods, estimated at 150,000,000 tons, are large enough to meet all requirements for an indefinite period; if it were possible to exploit materials containing 10 percent of silica, the reserves would total 1,500,000,000 tons.

Two principal processes are in general use for the production of aluminum from bauxite. In one process the ground bauxite is decomposed by heating with soda in giant rotary kilns, and the sodium aluminate formed is then dissolved, the iron oxide and the silica remaining as practically insoluble compounds. The other process involves decomposition of the bauxite with soda lye in autoclaves, again yielding a solution of sodium aluminate, while the iron oxide and the silica in the raw bauxite remain undissolved. The decomposed product is then thoroughly roasted, yielding an alumina which serves as the raw material for the production of metallic aluminum. This is effected by electrolytic decomposition of the alumina, the product being usually remelted in a special furnace and poured into bars. Another and much newer method is the electrothermic "Haglund" process, which is controlled by German aluminum interests and was first employed on a large scale in Italy.

Bauxite (Table IV) is not all consumed in the aluminum industry; some of it is used for other purposes, for example, in the cement industry. In 1927 only about half of the world's bauxite was used in the production of aluminum, the proportion rising to 60 percent in 1929 and over 80 percent in 1931. Bauxite is a relatively expensive raw material when put to other uses than aluminum production; the proportion con-

TABLE IV

PRODUCTION AND CONSUMPTION OF BAUXITE AND ALUMINUM, 1913–30
(In thousands of metric tons)

	BAUXITE PRODUCTION				ALUMINUM PRODUCTION				ALUMINUM CONSUMPTION			
	1913	1928	1929	1930	1913	1928	1929	1930	1913	1928	1929	1930
France	309.0	636.0	666.4	608.4	14.5	27.0	29.0	26.0	7.0	24.4	25.0	20.0
Germany	0.4	5.0	2.0		1.0	31.7	32.7	30.2	13.6	39.0	39.0	28.0
Italy	7.0	162.2	192.8	161.2	0.9	3.6	7.0	8.0	1.0	4.2	9.3	8.2
Jugoslavia		49.3	103.4	94.7								
Hungary	1.8	200.1	115.0	108.2								
Switzerland					10.0	19.9	20.7	20.5	4.0	6.0	8.0	7.0
Austria					3.0*	4.0	4.0	3.5				
Great Britain					7.6	10.7	13.9	14.0	5.0	17.0	30.0	24.0
Norway					1.5	22.8	24.4	24.7				
Spain						1.0	1.0	1.1				
Other countries†	6.2	11.4	12.4	19.1				0.2	4.0	13.0	14.0	16.0
Europe	324.4	1064.0	1092.0	991.6	38.5	120.7	132.7	128.2	34.6	103.6	125.3	103.2
United States	213.6	381.4	371.6	335.9	20.9	95.3	102.1	103.9				
Canada					5.9	40.0	42.0	34.9				
British Guiana		169.9	185.6	121.5								
Dutch Guiana		213.9	210.0	264.0								
America	213.6	765.2	767.2	721.4	26.8	135.3	144.1	138.8	31.2	124.0	137.0	95.0
India	1.3	14.9	9.2	2.5								
Asia	1.3	14.9	9.2	2.5					0.3	10.0	13.0	11.0
Australia										0.4	0.7	0.5
World total	539.3	1844.1	1868.4	1715.5	65.3	256.0	276.8	267.0	66.1	238.0	276.0	209.7

* Includes Austria-Hungary.
† Includes countries for which no specific information is given above.
Source Metallgesellschaft, Frankfurt a.M., *Statistische Zusammenstellungen über Aluminium* . . . , vol. xxxi (1930) 3–5, vol. xxiii (1932) 3–5.

sumed in the aluminum industry therefore rises when world business conditions are depressed and falls when they improve. The largest producers of bauxite are the French, from whom Great Britain imports practically all its requirements (scarcely any bauxite being imported from British Guiana).

Ownership and control of bauxite deposits are highly concentrated. The Aluminum Company of America (Mellon interests) owns deposits in the United States, the Guianas and other parts of the world. Recently the company bought the largest deposits in British Guiana and opened them to exploitation on a very large scale, constructing railroads and port facilities; it also owns the bauxite deposits in Dutch Guiana (the Surinaamsche Bauxite Mj. is a subsidiary of the Aluminum Company of America) as well as the bauxite fields in Istria and Dalmatia. Such European bauxite deposits as are not owned by the Mellon interests and the French are controlled, almost without exception, by the Bauxitsyndikat A.-G. of Zurich. This syndicate, organized in 1927, comprises the German, Swiss, Italian and British aluminum industries and includes also the owners of the Hungarian, Jugoslavian and Italian bauxite fields. Neither French nor American interests are represented. Thus the bauxite reserves of the world are divided among three major groups: the Americans, the French and the European Bauxitsyndikat.

The manufacture of aluminum is controlled by five corporate groups. The Aluminum Company of America has four plants in the United States; its Canadian subsidiary, Aluminum, Ltd., has two plants. In Germany the Vereinigte Aluminiumwerke operates two plants of its own and has majority stock control of the Erft-Werk A.-G., which operates one plant. A smaller plant belongs to the Metallgesellschaft and the I. G. Farbenindustrie, producing only aluminum alloys. Another German plant is the property of the Swiss Aluminium-Industrie A.-G. of Neuhausen, which also operates two plants in Switzerland. In France the aluminum industry is dominated by the Compagnie des Produits Chimiques et Électrométallurgiques Alais, Froges et Camargue, with eight plants. Another French aluminum smelting firm is the Société d'Électro-Chimie, d'Électrométallurgie et des Aciéries Électriques d'Ugine, operating three plants. The Alais group and the Ugine group are closely connected. In Great Britain the British Aluminium Company, since its purchase of the Aluminum Corporation, has completely dominated the industry. The Austrian and the Russian industry are of no importance in the world market.

The 276,800 tons of aluminum produced in 1929 was four times as high as the output in 1913 (Table IV), while in 1894 it was only 1240 tons. Improvements and lower prices resulting from the electrolytic process greatly accelerated the demand. The importance of aluminum increased tremendously during the World War, because it was found to be extremely useful for all sorts of military instruments. The German aluminum industry dates from the war.

Shortly after the World War efforts were made to combine the aluminum industry into a world cartel; but it was not until September, 1926, that a European aluminum cartel was formed, with Germany, France, Switzerland, Great Britain and Austria as members. This was a price fixing cartel with market allocations; it was expected that it would sooner or later come into conflict with the Aluminum Company of America, and there was much friction between the two, especially in colonial markets. The onset of the crisis in 1929 and after, however, so impaired market conditions that it forced an understanding. The American trust's erection of Canadian plants did not result in a conflict with the European cartel. Instead in 1931 the Alliance Aluminium Company was formed with its chief offices in Basel; the American trust played an important part in this merger of international interests. The Alliance Company, which controls nearly the entire world output and marketing of aluminum, is not a cartel but practically a world trust. This high degree of concentration is a result of the development of the aluminum industry during the age of advanced capitalism; its very beginnings bore the earmarks of capitalist monopoly. Aluminum production moreover requires large amounts of capital even for the erection of comparatively small producing plants. From the beginning aluminum production was based upon patent rights—in Germany governmental permission is a prerequisite to the establishment of a new plant—a fact which prevented wide distribution of producing plants, although the distribution of the raw material deposits would have made it possible.

Like its cartel predecessor the Alliance Aluminium Company pursues an aggressive price policy. Aluminum competes chiefly with copper and secondarily with tin and steel. The copper cartel, which was formed at about the same time

as the aluminum cartel, proceeded on the assumption that copper possesses a use monopoly in certain fields, upon which its price can be based. The leaders of the aluminum industry, on the other hand, assumed that aluminum must conquer its own market—mainly in competition with copper—and hence must be cheaper than copper. Copper cooking utensils have been almost completely displaced by aluminum in the United States and Germany; about 15 percent of the world's total aluminum consumption is devoted to cooking utensils. Aluminum is also coming into ever greater use in the construction of industrial apparatus, which absorbs some 14 percent of the total production; in breweries and distilleries, for example, giant tanks weighing as much as 18 tons are made of aluminum. Aluminum foil, accounting for about 15 percent of the supply, has almost wholly displaced the costly tinfoil in the packing of chocolate, cheese and cigarettes. Another important use of aluminum is in semifinished products, such as sheets, bars, wire and tubes, which use another 15 percent. Considerable aluminum is employed in the manufacture of alloys, such as silumin, which absorb from 10 to 12 percent of the average output. Some 10 percent is required in all sorts of engineering work, such as castings and cylinders in machinery, spools for the manufacture of artificial silk and similar products. The distribution of aluminum according to industrial uses varies of course with the industrial development of a country. In the United States, for example, the percentage of aluminum consumption by the automobile industry is considerably higher than in countries with smaller automobile production.

The great increase in the consumption of aluminum (Table IV) is merely an indication of the progress which may still be achieved. Aluminum is being increasingly utilized in new ways—for railway equipment, roofs and buildings, food containers, transmission, tank cars, pipe lines—for reasons of price or of quality.

Lead and Silver. These metals are historically closely interrelated; silver was obtained from lead ores at a comparatively early date. In general the lead ores containing silver are mined most intensively, because the silver content often pays for the mining of the lead ore. At the same time the increasing production of lead has greatly stimulated silver output. It is estimated that about 70 percent of the world's silver production comes from lead or lead-zinc ores, although lead and zinc are not so closely linked in economic geography as are lead and silver. The largest producers of lead are also generally the largest producers of silver.

The output of silver has not shown any great changes in recent years (Table V). The price of silver affects decisively the purchasing power of many countries, particularly India and China. Silver prices depend largely upon the amount of silver produced, which in turn is not an independent factor but is dependent upon the amount of production of other metals, particularly lead. In other words, when the demand for lead is great, silver production is increased. Hence there is the paradoxical result that the purchasing power of a large proportion of the earth's inhabitants is affected considerably by the magnitude of lead mined. This link did not exist in the past, so long as silver was principally obtained as the major product of real silver ores, as in Mexico. Lead production rose 39.4 percent from 1801 to 1820, compared with the preceding decade, while the production of silver dropped 39.5 percent. From 1821 to 1830 lead production rose no less than 168.2 percent, while silver production fell 11.4 percent. The two metals moved independently. The change began when improved technique succeeded in exploiting the silver of ores with a low silver content or in which the silver was hard to separate from the other metals. Coinage is still the major use to which silver is put, followed by jewelry and other luxury articles. It is estimated that during the past decade industry has used from 30,000,000 to 45,000,000 ounces of silver annually.

The Americas are the center of the world's lead production, with Asia (Burma) steadily increasing its output since the war. The opening of new mines in north Africa, whose lead reserves have been only slightly developed, may effect a marked change in the situation. There is considerable decentralization in lead production, and smelting is being centered closer to the ore producing fields. Australian experience indicates that this tendency has been accentuated since the World War. Before the war a large proportion of the Australian lead mines were owned and worked by German concerns, which did not propose to have the ores smelted at the mine by Australian concerns which they might not be able to control; in addition the Germans wanted to insure a supply of ore for domestic smelters under their control. Australian concerns now do most of the smelting. It is noteworthy that European smelter production of

TABLE V

WORLD PRODUCTION OF SILVER, 1913–30
(In thousands of fine ounces)

	1913	1928	1929	1930
Germany	4,984.6	5,220.8	5,512.8	5,485.4
Spain*	4,437.6	2,526.5	2,659.2	2,659.2
Austria†	2,104.1	18.9	10.6	10.2
Greece	803.7	241.1	241.1	241.1
France	520.7	360.1	360.1	652.0
Italy	423.8	514.4	518.7	571.6
Norway	247.9	398.7	322.3	337.8
Russia		380.0	300.0	300.0
Great Britain	128.5	32.8	36.0	40.9
Czechoslovakia		767.7	723.0	890.5
Other countries‡	1,596.8	472.8	606.3	876.0
Europe	15,247.7	10,933.8	11,290.1	12,064.7
Japan	4,649.9	5,144.9	5,144.9	5,628.5
Burma		7,400.0	7,273.3	7,072.1
Dutch East Indies	465.9	2,032.0	1,967.9	2,094.2
Other countries‡	66.8	503.2	466.2	467.4
Asia	5,182.6	15,080.1	14,852.3	15,262.2
Union of South Africa	933.1	1,031.4	1,031.8	1,050.0
Other countries‡	122.9	234.0	280.8	255.4
Africa	1,056.0	1,265.4	1,312.6	1,305.4
Mexico	70,703.8	108,537.3	108,700.4	105,410.9
United States	66,801.5	58,426.0	61,233.3	50,627.2
Canada	31,524.7	21,936.4	23,143.3	26,435.9
Peru	9,971.0	21,607.7	21,495.2	15,500.3
Bolivia	3,932.5	5,638.8	4,816.2	7,091.1
Chile**		1,436.7	1,436.7	732.4
Other countries‡	2,860.7	2,758.6	3,000.0	4,112.8
America	185,794.2	220,341.4	223,825.1	209,910.6
Australia	18,128.5	10,304.4	10,434.0	10,164.9
World total	225,409.0	257,925.4	261,714.1	248,707.8

* 1913 total includes Portugal.
† Austria-Hungary in 1913.
‡ Includes countries for which no specific information is given above.
** 1913 output included in Bolivia.
Source. Compiled from the *Annual Reports* of the Director of the United States Mint.

lead has declined considerably since 1913 (Table VI). In 1931 there were 107 lead smelters in the world; while there are a considerable number of small producers in Europe, Africa, Asia and South America, lead production is dominated by about a dozen concerns, which operate on an international scale.

Since 1913 the greatest advances in lead consumption have been in the United States and Japan. Nearly 30 percent of the metal is used in the manufacture of electric batteries and storage batteries. Lead is indirectly of considerable importance in power transmission, since 20 percent of the total output is required in the manufacture of cable sheaths. Lead is thus an important structural material for the electrical industry. In the automobile industry, which absorbs only 1 percent of the total output, lead is little used. Building construction accounts for some 8 percent, while smaller percentages are distributed among munitions, lead foil, type metal, solders, bearing metals and similar manufactures. An important consumer of lead is the paint industry, which demands from 16 to 18 percent of the total. The world's lead markets are split up by numerous tariff walls, and many countries impose prohibitive tariffs.

Zinc. The industrial production of metallic zinc dates from the beginning of the eighteenth century. As a rule the mined ore cannot be smelted at once because of its low zinc content; it must first be freed of the barren rock, which is done mainly by means of flotation, preceded by a mechanical separation according to weight. The flotation process has grown considerably since the war and has rendered valuable service

TABLE VI

PRODUCTION AND CONSUMPTION OF LEAD, 1913–30
(In thousands of metric tons)

	MINE PRODUCTION				SMELTER PRODUCTION				CONSUMPTION, CRUDE			
	1913	1928	1929	1930	1913	1928	1929	1930	1913	1928	1929	1930
Spain	178.8	113.3	116.5	109.5	213.0	123.1	133.6	121.5	10.0	24.0	25.0	25.0
Germany	80.3	48.7	52.7	61.0	172.7	87.0	97.9	110.8	215.1	216.5	212.3	165.2
Italy	26.8	31.7	30.5	29.9	21.7	21.3	22.7	24.3	32.6	48.3	47.3	42.2
Austria*	20.6	6.0	7.5	8.9	24.1	8.1	6.6	6.9	35.5	16.7	15.1	10.7
Great Britain	18.4	15.1	18.9	20.6	30.4	8.6	10.8	10.4	191.3	245.0	274.2	250.0
Greece	18.4	7.3	5.4	7.3	18.4	7.3	5.4	7.3				
France	10.2	7.5	11.2	11.0	28.8	22.7	20.8	19.4	108.4	113.7	112.5	145.0
European Russia	3.3	1.0	1.8	1.6					58.8	52.0	50.0	58.0
Sweden	1.7	3.3	7.0	5.9								
Czechoslovakia and Jugoslavia		16.0	15.5	24.8		13.2	13.9	14.2				
Belgium					50.8	53.6	53.5	58.9	37.8	51.1	55.0	48.0
Holland									9.5	18.0	20.7	22.5
Switzerland									5.8	9.5	11.3	12.6
Other countries†	0.9	14.9	14.9	14.2	2.2	30.0	28.3	31.9	6.3	58.0	59.6	63.1
Europe	359.4	264.8	281.9	294.7	562.1	374.9	393.5	405.6	711.1	852.8	883.0	842.3
United States	453.8	568.9	587.8	507.1	407.9	607.2	649.2	557.3	401.4	636.0	657.5	521.5
Mexico	62.0	236.5	248.5	232.9	55.5	215.5	229.8	231.2				
Canada	17.1	153.3	148.1	151.0	17.2	146.5	140.9	139.1	22.3	30.8	37.8	30.0
Other countries†	3.0	36.0	53.2	47.0	2.5	22.0	28.2	22.8	10.2	32.0	28.0	25.0
America	535.9	994.7	1037.6	938.0	483.1	991.2	1048.1	950.4	433.9	698.8	723.3	576.5
Asiatic Turkey	14.0	7.1	6.6	7.0	13.9	7.1	6.6	5.6				
India (Burma)	10.0	83.1	84.9	85.7	6.5	79.6	81.5	80.8				
Japan	3.8	3.7	3.4	3.6	3.8	3.7	3.4	3.4	18.7	65.8	64.0	59.4
Other countries†	1.5	12.5	13.5	13.0		1.8	5.0	7.0	6.7	21.7	13.9	18.2
Asia	29.3	106.4	108.4	109.3	24.2	92.2	96.5	96.8	25.4	87.5	77.9	77.6
Algeria	10.3	12.9	8.6	7.2								
Tunis	23.0	18.7	17.0	15.0		17.6	18.9	19.1				
Rhodesia	0.5	4.8	1.7			4.8	1.7					
Other countries†	16.0	23.7	23.4	22.8	0.6	5.0	3.3	2.8				
Africa	49.8	60.1	50.7	45.0	0.6	27.4	23.9	21.9	6.2	3.5	4.6	4.5
Australia	254.8	172.8	187.0	194.1	115.6	157.6	179.7	171.0	9.6	12.0	15.0	12.0
World total	1229.2	1598.8	1665.6	1581.1	1185.6	1643.3	1741.7	1645.7	1186.2	1654.6	1703.8	1512.9

* Austria-Hungary in 1913.
† Includes countries for which no specific information is given above.
Source: Metallgesellschaft, Frankfurt a.M., *Statistische Zusammenstellungen über Aluminium . . .*, vol. xxxi (1930) 6-8, vol. xxxiii (1932) 6–8.

where the zinc ores are scattered in fine particles throughout the barren rock or are closely interlaced with other minerals. Without this process the exploitation of very extensive zinc ore deposits would be practically impossible or extremely costly. The various processes are often combined in large plants located in zinc ore fields. These centralized plants do not always include production of the metal, but merely of concentrates, which are shipped to distant smelters. There existed everywhere before the war numerous job smelters without ore resources of their own. The present trend, however, is toward the elimination of job smelters, with the result that the zinc ore offered for sale in the open market is constantly diminishing.

In 1913 the world's zinc supply was centered in Germany and Belgium. Part of the German zinc industry depended upon the zinc ore deposits of Upper Silesia, while the Belgian and west German zinc smelters imported most of the necessary ore from other countries, chiefly Australia and the United States; the zinc was then reexported as metallic zinc or in manufactured form to supply the requirements of the countries which had ore deposits but no adequate zinc smelting industry. In recent years the production of zinc has shifted largely to the coun-

tries possessing large zinc deposits, instead of being concentrated in central Europe.

The United States is the world's greatest producer of zinc (Table VII); its export of zinc concentrates, which was important before the war, has practically ceased, largely because smelter capacity has increased tremendously, so that the American smelters work at only two-thirds capacity even in boom times. Second in importance as a zinc mining country is Australia; before the war about 75 percent of the ore was shipped to Belgium, Germany, France and Holland, but the exports have since declined considerably. Only a small part of Mexico's large zinc output is smelted in the country. There is a trend among the large American concerns toward the erection of extensive smelting plants in Mexico, whose export of zinc concentrates is still of importance for the Belgian and German smelters, although this condition may cease suddenly. Poland ranks fourth among the zinc mining countries of the world. In Germany the zinc mines cannot fill the capacity requirements of the smelters.

There has been a twofold shift in zinc smelter production since the World War (Table VII). American production, which constituted only

TABLE VII

PRODUCTION AND CONSUMPTION OF ZINC, 1913–30
(In thousands of metric tons)

	MINE PRODUCTION				SMELTER PRODUCTION				CONSUMPTION, CRUDE			
	1913	1928	1929	1930	1913	1928	1929	1930	1913	1928	1929	1930
Germany	250.3	137.4	147.4	154.3	281.1	98.1	102.0	97.3	232.0	204.3	198.0	171.0
Belgium		6.0	5.0	4.0	204.2	206.3	197.9	176.2	82.6	114.9	123.5	118.0
Spain	66.5	43.0	53.0	50.0	6.9	13.5	11.8	10.7	6.0	9.5	9.2	9 0
Italy	63.3	84.8	87.0	79.6		10.6	15.7	19.0	10.8	21.1	22.8	23.2
European Russia	31.4	2.0	2.2	2.5		2.4	2.2	2.5	33.3	33.0	37.0	42.0
Sweden	17.2	14.2	29.9	30.0	2.1	5.1	4.7	4.1	11.0	9.4	11.9	12.0
Norway					9.3		5.5	34.6				
France	13.0	9.5	9.6	7.4	64.1	96.8	91.6	90.7	81.0	125.3	116.3	127.0
Greece	10.5	4.5	5.9	3.7								
Great Britain	5.9	0.7	0.9	0.7	59.1	56.3	59.2	49.4	194.6	184.0	190.2	155.0
Poland		100.0	105.0	100.0	7.6	161.8	169.0	174.7	40.3	7.1	7.8	7.5
Austria*					21.7							
Holland					24.3	26.9	25.7	23.3	4.0	5.5	8.5	9.0
Czechoslovakia and Jugoslavia						15.5	19.5	21.1				
Other countries†	4.1	3.5	4.0	12.5					1.0	71.4	76.0	65.8
Europe	462.2	405.6	449.9	444.7	680.4	693.3	704.8	703.6	696.6	785.5	801.2	739.5
United States	368.7	630.6	657.2	540.2	314.5	546.7	567.4	451.8	279.6	518.7	528.1	386.0
Mexico	6.8	161.7	174.0	124.1		11.2	15.1	29.4				
Canada	4.5	83.8	89.5	121.4		74.2	78.1	110.2				
Other countries†	2.1	12.3	38.0	39.0					3.5	31.7	37.3	27.9
America	382.1	888.4	958.7	824.7	314.5	632.1	660.6	591.4	283.1	550.4	565.4	413.9
Japan	15.8	10.0	10.0	10.0					7.4	54.9	46.7	45.2
China	3.9	4.0	11.0	3.8								
Indo-China	14.0	21.5	18.8	15.9								
Other countries†	2.3	42.0	46.2	46.5					8.9	8.5	8.3	9.6
Asia	36.0	77.5	86.0	76.2	1.5	22.0	26.9	28.8	16.3	63.4	55.0	54.8
Algeria	36.9	15.0	13.8	8.0								
Tunis	1.9	5.0	3.8	0.9								
Rhodesia		13.6	22.5	19.3								
Other countries†		1.7	2.4	0.7								
Africa	38.8	35.3	42.5	28.9		9.7	12.3	18.2	0.6	2.0	2.0	2.0
Australia	219.7	150.2	157.0	121.5	4.4	51.0	52.7	55.8	4.4	15.4	15.0	13.0
World total	1138.8	1557.0	1694.1	1496.0	1000.8	1408.1	1457.3	1397.8	1001.0	1416.7	1438.6	1223.2

* Austria-Hungary in 1913.
† Includes countries for which no specific information is given above.
Source: Metallgesellschaft, Frankfurt a.M., *Statistische Zusammenstellungen uber Aluminium . . .*, vol. xxxi (1930) 14–16, vol. xxxiii (1932) 14–16.

31 percent of the world total, reached 45.5 percent by 1929, while Europe's output dropped from 68 to 48.5 percent. Another important change is the growing proportion of electrolytic zinc. Before the war the percentage was so small as to be statistically negligible, while in 1931 electrolytic zinc accounted for some 33 percent of the total world output.

Zinc production is more highly concentrated than lead production. In the United States by far the major part of the output is practically controlled by three companies—the Anaconda Copper Mining Company, the American Smelting and Refining Company and the American Metal Company. The United States Steel Corporation also operates zinc smelters with an aggregate output of about half that of the Anaconda Company. Canadian zinc smelting is dominated by the Consolidated Mining and Smelting Company of Canada and the Hudson Bay Mining Company, while in Europe the chief producers are the Vieille Montagne group, which has smelters in Belgium, Germany and France, and the Upper Silesian Giesche group, in which Anaconda has an interest. Other dominant concerns are the British National Smelting Company, Ltd., and Imperial Smelting Corporation, Ltd., and the Electrolytic Zinc Company of Australia.

The zinc smelting industry is closely bound up with the manufacture of sulphuric acid. It is generally estimated that the smelting process extracts half a ton of zinc and one ton of sulphuric acid from one ton of crude concentrate. The opportunities for marketing sulphuric acid largely determine the profitableness of zinc smelters. Of a total sulphuric acid production of 6,500,000 tons of sulphuric acid (60° Baumé) in the United States in 1929 some 1,300,000 tons were obtained from copper and zinc ores and about 295,000 tons out of a total output of 336,000 tons in Poland, while 188,000 tons were obtained from zinc blende in Germany in 1929. The Belgian zinc smelters dispose of their sulphuric acid jointly with the French chemical industry. In recent years therefore zinc smelters have been endeavoring to locate in regions where a fairly stable sulphuric acid demand exists.

The United States has made the largest gains in the consumption of crude zinc (Table VII). It is estimated that about 46 percent of the total American amount is used in the galvanizing of sheets, pipes, wire and the like, while some 29 percent is absorbed by brass production. About 11 percent goes to rolling mills, chiefly for the manufacture of zinc sheeting for roofing, and some 6 percent to art casting; while the remainder is used in the manufacture of zinc paints and of zinc dust, which is widely employed as a reducing agent. Zinc compounds are extensively used in the chemical industry.

Tin. The world's production of tin is concentrated in Asia, chiefly in the Federated Malay States, the Dutch East Indies, China and Siam. In Bolivia production is growing to considerable proportions, while in Africa and Australia it is proceeding on a much smaller scale.

There are geologically two major groups of tin deposits, a classification which is also important economically. Because of its high specific gravity and its resistance to atmospheric effects, tinstone (cassiterite), the principal tin ore, is found in the form of "stream tin" as well as in the primary form of "mine tin." Stream tin comprises the largest deposits at present, thus being more important than the usually much poorer primary deposits. The mining of stream tin usually consists in flooding the area, the tin bearing sludge produced being pumped out by special dredgers, then dried and concentrated. This process is considerably cheaper than the mining of primary ore veins and constitutes the main cause of the rapid growth of tin mining in the Malay States, the Dutch East Indies and Siam; the Bolivian, Chinese and Nigerian mines use the more costly regular mining methods.

In the Malay States tin mining is in the hands of a large number of concerns, whose annual production ranges from a few tons to several thousand tons. Severe competition is offered the large mechanized plants by the small Chinese entrepreneurs, who operate much more cheaply, working by quite primitive methods and sometimes employing only a few coolies. The small Chinese plants control a considerable tin output and were exerting great influence in the market until legislation compelled them to comply with certain production limits. The far reaching decentralization of Malayan tin mining contrasts with the extremely centralized mining in the Dutch East Indies and Bolivia. The industry is dominated by two major groups in each area—the Banka and Billiton groups in the Dutch East Indies and the Patiño and Aramayo groups in Bolivia.

The United States is the largest consumer of tin, absorbing some 50 percent of the world output, compared with 15 percent consumed by England and 10 percent by Germany. Yet tin is one of the very few raw materials not found in

the United States in profitable quantities. Thus the United States is merely a tin buyer not a tin producer, although it is simultaneously a large scale producer and consumer of all other metals. This together with the fact that London has been for decades the center of the world's tin trade has a profound influence on the tin market. The interests of the United States are wholly on the side of low prices with regard to tin, whereas in the case of other metals there are powerful opposing interests because of the large production of the United States. In this respect the tin industry strongly resembles the rubber industry. There are two large tin smelters in the United States erected during the World War, but since they have been unable to secure ore they have been shut down since shortly after the war. The centers of the tin smelting industry are in England and the Straits Settlements. Of the total world smelter capacity of 272,000 tons some 190,000 tons, or about 70 percent, is controlled directly by the British, but the percentage becomes still higher if the 20,000 tons of wholly unused American smelter capacity is disregarded; Germany has a capacity of 12,000 tons, Holland of 5000 tons, Belgium of 1800 tons and France of 1000 tons. The output of tin under British control rose from approximately 50 percent in 1913 to 84 percent in 1929 (Table VIII).

TABLE VIII

PRODUCTION AND CONSUMPTION OF TIN, 1913–30

(In thousands of metric tons)

	MINE PRODUCTION				SMELTER PRODUCTION				CONSUMPTION, CRUDE			
	1913	1928	1929	1930	1913	1928	1929	1930	1913	1928	1929	1930
Great Britain					22.7	50.0	58.0	49.0	25.1	29.3	25.2	19.7
Germany					12.0	7.0	4.0	5.0	19.9	14.6	16.4	14.6
France									8.3	11.0	12.1	11.9
Austria*									3.1	1.3	1.1	0.9
Italy									2.9	4.0	5.0	4.4
Russia									2.7	5.0	4.5	5.0
Belgium									2.3	1.3	1.4	1.5
Scandinavia									1.6	1.8	2.3	2.5
Switzerland									1.4	2.0	2.2	2.3
Spain									1.3	1.6	1.8	1.9
Holland									0.3	1.0	1.4	1.4
Other countries†					0.5	1.6	2.0	3.2	1.2	5.0	5.5	5.1
Europe	5.4	3.6	4.1	3.4	35.2	58.6	64.0	57.2	70.1	77.9	78.9	71.2
United States									45.0	76.7	86.1	75.0
Bolivia	26.8	42.1	47.1	38.8	0.3							
Other countries†	0.4	0.2	0.2	0.4					3.4	5.8	6.2	5.1
America	27.2	42.3	47.3	39.2	0.3				48.4	82.5	92.3	80.1
Malay States	52.7	65.5	70.5	65.0								
Straits Settlements						96.3	107.1	97.0				
Dutch East Indies	21.2	35.5	36.3	34.9	86.1	14.5	13.6	15.1				
China	8.5	6.9	6.9	6.6	6.1	6.9	6.9	6.6	5.4	3.9	3.3	3.2
Siam	6.7	7.7	10.1	11.7								
Japan						0.5	0.6	0.7				
Indo-China						0.3	0.3	0.3				
Other countries†	0.7	3.8	4.3	5.1					3.3	7.6	7.6	6.9
Asia	89.8	119.4	128.1	123.3	92.2	118.5	128.5	119.7	8.7	11.5	10.9	10.1
Africa	5.4	11.9	13.3	10.6					0.5	1.5	1.7	1.7
Australia	7.9	3.2	2.3	1.6	4.8	3.2	2.3	1.6	1.4	1.9	1.7	1.4
World total	135.7	180.4	195.1	178.1	132.5	180.3	194.8	178.5	129.1	175.3	185.5	164.5

* Austria-Hungary in 1913.

† Includes countries for which no specific information is given above.

Source: Metallgesellschaft, Frankfurt a M., *Statistische Zusammenstellungen uber Aluminium . . .*, vol. xxxi (1930) 17–18, vol xxxiii (1932) 17–18.

Corporate control of the tin industry is highly concentrated. In 1929 the British smelters merged into a trust, the Consolidated Tin Smelters, Ltd., which controls also the Eastern Smelting Company and other concerns in the Far East; the combination has an annual smelting capacity of 120,000 tons and is affiliated with the Patiño interests, which have no smelter of their own in Bolivia but produce some 20,000 tons of tin annually (33,000 tons in 1929). This is the dominant group. The other Bolivian concern, the Compagnie Aramayo de Mines en Bolivie, is controlled by the Guggenheim interests; this is the only case of a major American influence in the tin industry.

Tin is fairly easy to replace. About one third of the tin output is consumed in the manufacture of tin plate, which is also the most important source of resmelted tin. Tin is important as an essential constituent of bearing metals, and it is used in considerable amounts in the chemical industry.

Nickel. For a long time nickel was not recognized as an independent metal. It was produced in an independent but impure metallic form for the first time in 1751; pure nickel was produced in 1804. For many years nickel was used mainly in the production of German silver, a copper-nickel-zinc alloy, and for coinage. The demand for the metal rose enormously when it began to be used in the galvanizing of iron articles and particularly after 1889 in electroplating and the manufacture of high grade steel. The raw materials for nickel production formerly came from Germany, Austria and New Caledonia; at present, however, about 90 percent of the total world production of nickel comes from the Canadian ore fields (Table IX). There are other deposits, especially in Russia, but they are still comparatively unimportant.

The geographical concentration of nickel ore deposits is reflected in a corresponding concentration of corporate control. In 1928 the Canadian and British groups merged to form the International Nickel Company of Canada, which at present completely dominates the world market. International Nickel easily induced the comparatively small independent groups (the French Société de Nickel, which exploits deposits in New Caledonia, and the Falconbridge Nickel Mines, Ltd., of Canada, which is also interested in the exploitation of the old Norwegian deposits in Kristiansand) to comply with a price policy without precedent in other metal markets. The price of nickel has been practically unchanged since 1925; it was not raised during the metal boom of 1925–29 nor was it reduced during the crisis. The extent of concentration is evidenced by the fact that the two electrolytic plants of the International Nickel Company of Canada have a combined annual capacity of 90,000 tons, greatly exceeding the amount of ore mined and the world's present needs.

TABLE IX

MINE PRODUCTION OF NICKEL, 1913–30
(In thousands of metric tons of nickel content)

	1913	1928	1929	1930
Germany	0.8	—	—	—
Norway	0.7	0.5	0.4	0.9
Greece	—	0.6	0.6	0.5
Other countries	—	0.4	0.5	0.8
Europe	1.5	1.5	1.5	2.2
Asia (Burma)	—	0.7	0.8	1.0
Canada	22.5	45.5	58.5	55.4
United States	0.2	0.5	0.3	0.3
America	22.7	46.0	58.8	55.7
Australia	6.7	4.6	5.4	5.5
World total	30.9	52.8	66.5	64.4

Source: Metallgesellschaft, Frankfurt a.M., *Statistische Zusammenstellungen über Aluminium . . .*, vol. xxxi (1930) 12, vol. xxxiii (1932) 12.

Nickel is consumed mainly in the form of alloys. In 1926 ferronickel and nickel steel accounted for 37 percent of the world's nickel consumption; cupronickel and German silver alloys, 37 percent; other alloys and nickel castings, 16 percent; and nickel plating and the chemical industry, 10 percent.

Alloys. Although alloys (e.g. bronze) have been used for many centuries, recent technical improvements have greatly augmented their number; there are now thousands of alloys, which are important chiefly because they improve upon the basic metal either generally or for some specific purpose. Alloying may harden a metal, increase its ductility, raise its resistance to external influences and produce other desirable changes. The multitude of alloys may be divided into three great groups: iron and steel alloys, copper alloys and aluminum alloys.

The principal iron alloy, from the standpoint of quantity, is ferromanganese. Manganese is usually added to steel to increase its hardness. The principal deposits of manganese ore are in Russia, British India, the Gold Coast, South Africa, Brazil, Cuba, Tunis and Morocco; most countries, however, have some manganese deposits or iron ore deposits containing manganese, although the major steel producers must depend

upon imports. About 80 percent of the world supply comes from Russia, the Gold Coast, Brazil and British India. Manganese is employed extensively in copper and aluminum alloys, in the chemical, paint and pharmaceutical industries and in the manufacture of dry batteries. But its most important use is in iron and steel alloys, the composition of which varies widely because variations in the amount of manganese added to steel result in extraordinary changes in its properties. Manganese steels, while extremely hard, are not brittle and are used in the manufacture of products requiring high tensile, compressive and resistant strength. They are indispensable in the manufacture of gearing, power transmission chains, rollers and roller axles, railway bolts, ore and grain mill parts and so on. Among other important steel alloys are ferrosilicon, ferrochrome, ferrotungsten, ferronickel, ferrovanadium, chrome nickel and stainless steel, which is an alloy of iron, chromium and nickel. In the United States in recent years alloy steels have comprised from 5 to 7 percent of the steel output.

The principal copper alloy is brass. Cast brass contains from 55 to 67 percent copper and about 3 percent lead; the remainder is zinc. Special brasses sometimes have small quantities of manganese, aluminum, iron and tin, the aggregate percentage rising as high as 7.5 percent. Brass is used in the manufacture of a variety of consumers' goods, as well as for ship propellers, small bearings, portholes and castings of high tensile strength. There are various forms of rolled and hammered brass. Hard brass (screw brass), with 58 percent copper, 2 percent lead and 40 percent zinc, is used for bar stock for screws, in electrical engineering and in the manufacture of instruments, window frames and other construction parts. Wrought brass, containing 60 percent copper and 40 percent zinc, is employed for bars, wire, sheets and pipes and many other purposes, especially in shipbuilding; while brass containing 63 percent copper and 37 percent zinc is used in the form of sheets, strips, wire and bars in the manufacture of metal goods and instruments. There are many other brasses of importance in manufactures. Nearly every country has a brass industry. In 1929 Germany produced approximately 120,000 tons and the United States 220,000 tons. Scrap brass is resmelted on a large scale.

Another important group of copper alloys includes the red brasses and bronzes. These are mainly alloys of copper, zinc and other constituents. Bronze is used extensively in machinery, shipbuilding, locomotives and freight cars and in building construction.

There are hundreds of alloys of aluminum, which is alloyed with other metals either to increase its hardness, tensile strength and ductility or to produce very light metals; in the form of duraluminum it is being increasingly used in airplane and similar manufactures, in building construction and for other purposes. The light metal industry, which is becoming increasingly important, is still in its infancy but it is being actively promoted by aluminum concerns. Both aluminum and aluminum alloys have the advantage of light weight; a new American type of railway car built of duraluminum weighs nearly one half less than if built of ordinary structural steel.

The properties of magnesium, which is used to form the most important of the aluminum alloys, are still in dispute; it has been known since 1809, but the technical difficulties involved in the mass production of magnesium were solved only shortly before the World War and mainly in Germany. Before the war the United States secured it from Germany, but it has since depended upon its own magnesium production, accompanied by intensive technological development. There are no accurate statistics on the production and consumption of magnesium. The world output is estimated at about 6000 tons, about half of which is produced in Germany by the I. G. Farbenindustrie, which has an agreement with the American Magnesium Corporation. Since there is an abundance of raw material available in the form of magnesium chloride, it is generally believed that magnesium may soon become a serious competitor of aluminum. But the bonds between the two industries are so close already that there is little likelihood of a struggle for supremacy between the two metals; magnesium production is practically under the control of the Aluminum Company of America in the United States and of the I. G. Farbenindustrie in Germany. About 60 percent of magnesium is used in the form of alloys and 15 percent in the form of powder; the chemical industry absorbs considerable quantities.

Other Metals. Gold and platinum are the most important of the other metals. The importance of gold lies in its monetary uses (*see* GOLD). The industrial uses of gold, however, are also important, although no more so than those of silver. The most important property of gold is its extraordinary resistance to all sorts of destruc-

tive influences. Whereas iron has an average durability of some twenty-five years and that of other metals is considerably shorter, the life of gold is practically unlimited. The industrial use of gold is estimated by the gold committee of the League of Nations in its 1931 report at about 45 percent of the total consumption. It is used mainly for jewelry and other luxury articles, in the chemical industry and in dentistry. Approximately one third of the gold used in industry is derived from the resmelting of old gold. The gold used in the manufacture of gold leaf and in gilding and gold plating is, however, lost forever.

Compared with gold, platinum and the metals in the platinum group are of relatively slight importance as "precious metals." The properties of platinum were known as early as the eighteenth century, but the metal was not produced industrially until the nineteenth. All platinum came from Colombia until 1819, when extensive deposits were discovered in the Urals in Russia, which became the largest producer of platinum, producing 7775 kilograms in 1913 out of a world output of some 8500 kilograms. Russian production became negligible during the World War and as a result of the revolution; an extreme shortage prevailed until 1927, and platinum prices rose considerably. As a consequence Colombian production revived, yielding over 1600 kilograms in 1928, when Russian production increased very rapidly, mounting to over 4000 kilograms in 1931. The Russians, whose platinum deposits were exploited mainly by British and French groups before the war, have since modernized their platinum production and are again the most important factor in the industry, having almost completely overwhelmed Colombian competition. Soviet Russia has also offered severe competition to South Africa, which started production only after the war. The Canadian output, however, challenges that of Russia, since it is not obtained from platinum ores but is a relatively cheap by-product of the smelting of nickel-copper ores. The strength of this competition led the Russians to reach an agreement with the British-Canadian-South African interests after years of bitter struggle for the domination of the world market. The agreement resulted in the establishment of Consolidated Platinums, Ltd., with its main offices in London. It is the function of this company, which is usually called the "international platinum convention," to regulate the sale of platinum; but it has been unable to stop the price drop of five sixths which has occurred since the crisis. The largest consumer of platinum is the United States. The jewelry industry uses approximately 45 percent of the output of platinum, dentistry 20 percent, electrical manufacturing 18 percent, the chemical industry 15 percent and miscellaneous industries 2 percent. Platinum compounds and platinum sponge are of great importance as catalyzers in the chemical industry.

The other metals of the platinum group—osmium, iridium, palladium, rhodium, ruthenium and osmiridium—are of slight importance in world economy. Iridium is employed in the manufacture of fountain pen points. Palladium is often used as a substitute for platinum in the jewelry industry because of its lower cost.

The remaining metals are close to the border line between metallic and chemical raw materials. The German tariff, for example, classifies mercury as a chemical raw material. Mercury has been mined since early times; the Phoenicians produced it in the Spanish mines at Almadén, which are still the largest in Spain. The production of mercury rose sharply when increasing quantities were employed in the production of silver after the discovery of the New World. The chief producing countries before the World War were Austria, Spain, Italy and the United States. Austria is no longer an important producer, as its production areas were annexed by Italy. At the present time Italy is the world's largest producer, although Spain could have a larger output if production were not voluntarily restricted by the Spanish-Italian cartel, which has profoundly changed the world market in mercury. Prior to the war sales in Austria were made through a government monopoly, which owned the present Italian mines in Idria. The Italian Monte Amiata group sold its own output, while for many decades the Spanish Almadén group was financially linked with the Paris Rothschilds, who were in charge of its sales. There were thus three major factors in the world market. After the World War Italian and Austrian production were merged, and in 1927 the Italian producers formed a cartel with the Spanish interests, the Mercurio Europeo. This arrangement, which expires in 1934, at first dominated the world market almost exclusively. It controlled about 85 percent of the world's output; even American consumption depended upon it until very recently, and the cartel took advantage of the monopoly to maintain mercury prices at an extremely high level.

This price policy, which for many years made mercury relatively the most expensive raw material in the world, resulted in stimulating production wherever production was possible. The United States, which produced only 305 tons in 1926, increased its output to 1104 tons in 1931. In 1926 American production was only 9 percent of the European output, but by 1931 it amounted to more than half. This development together with the restriction of the industrial use of mercury by the Mercurio's price policy and the decline in prices caused by the world crisis brought about the disintegration of the cartel. It will be difficult to revive the industry, because the high prices of mercury have led to the adoption of satisfactory substitutes on an unexpectedly large scale.

Other metals obtained in comparatively small quantities might also be mentioned; for example, cadmium, which is found almost exclusively in zinc ores, is produced only by the large zinc smelters. The American Smelting and Refining Company has been producing large quantities of cadmium in Mexico. In 1930 the output in the United States was about 2,700,000 pounds, while Canada produced some 460,000 pounds, Poland 207,000 pounds, Mexico 1,200,000 pounds and Tasmania 520,000 pounds. There is no cadmium cartel, but prices are fairly steady, since most of the metal is sold under long term contracts. Cadmium is used in paints and is required in large quantities in electroplating, a field in which it competes with nickel and chromium.

Little chromium is bought and sold in metallic form, most of it being traded as ore or alloyed with iron. The most important ore deposits are in Rhodesia, India, Russia, Cuba, Cyprus, Turkey, New Caledonia and Greece. Metallic chromium is gaining wider use as an electroplating metal, especially for building construction and automobile parts. Chemical compounds of chromium are of considerable importance in the leather industry.

Cobalt, which like chromium is often alloyed with iron, is chiefly produced in Canada and in the Belgian Congo. The world output has averaged 1,800,000 pounds during recent years. In 1928 production was equally divided between these two countries, but the Belgian share has recently risen to two thirds. The sale of the metal in Europe is controlled almost exclusively by Vickers-Armstrong, the British steel concern.

Tungsten, which is mined mainly in China and Burma, is of great importance in the manufacture of incandescent lamps. The successful drawing of tungsten wire has aided considerably the growth of this industry. The international incandescent lamp cartel is based upon control of patents covering the process involved. Most of the metal is used in the steel industry; steels alloyed with tungsten are especially suitable for high speed cutting tools and drills.

Antimony, which is of importance in paint manufacturing, is produced almost exclusively in China. It is also obtained from antimony bearing lead ores. The metal is much used to harden lead, as in the manufacture of buckshot and shrapnel.

The production of bismuth, most of which comes from Bolivia, is regulated by an international cartel which is under the control of British commercial firms. The use of bismuth, at least in its metallic form, has greatly diminished of late. Bismuth salts (e.g. subnitrate and nitrate, subgallate) are of importance in pharmacology. As the metal melts very easily, it is used to some extent in the manufacture of automatic fire alarm equipment.

There is a considerable movement of metal ores, concentrates and crude metals as well as of semifinished and finished metal products between the several countries and continents. The Americas, Africa and Australia are "surplus" continents, while Asia also has a surplus of mine production over smelter production. Europe, however, is a "deficit" continent in both mining and smelting. In 1929 the world exports of pig iron amounted to 2,700,000 tons; total exports of crude iron and steel by Great Britain, Germany, France and the United States aggregated over 16,600,000 tons. In the same year there were 405,800 tons of zinc exports, 723,400 tons of lead exports and 875,900 tons of copper exports, exclusive of exports of semifinished and finished products containing these metals (Table x), besides large exports of other metals. In fairly normal years approximately 70,000,000 tons of metals and metal products, the major item being iron and steel, are shipped from one country to another. A comparison with other commodities provides an indication of the economic importance of metals in the world's economy—in the fiscal year 1928-29, for example, the wheat imports of forty-one countries totaled approximately 25,000,000 tons and the cotton imports of twenty-two countries, 3,500,000 tons.

The foreign trade in metal ores and raw metals is affected by the control of ore reserves by monopolistic combinations, cartel regulations,

TABLE X

IMPORTS AND EXPORTS OF CRUDE COPPER, LEAD AND ZINC, 1929
(In thousands of metric tons)

	COPPER		LEAD		ZINC	
	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS
Germany	194.6	31.8	136.8	22.4	136.2	38.0
Austria			9.6	1.1	8.2	0.4
Great Britain	156.2	19.9	297.1	31.6	144.7	137.6
France	146.8	1.7	96.5	4.8	39.3	14.6
Belgium			31.3	20.9	6.9	71.5
Spain	1.2	7.4	0.2	99.6	0.9	3.5
Italy			24.7	0.1	8.3	1.2
Japan	4.9	2.1	60.6		27.1	
United States	77.4	373.4	1.5	66.5	0.2	13.1
Canada	17.6	67.3	0.5	103.6	1.2	61.3
Mexico	0.7	65.0	0.2	216.3		
Australia	0.1	3.1		156.5		32.3
Sweden	25.1	3.3				
Chile		300.9				
Poland					0.2	32.3
Total	624.6	875.9	659.0	723.4	373.2	405.8

Source: Compiled by the author.

tariffs and the "metal politics" of the major producing and consuming countries. Metal politics, in addition to considerations of imperialistic policy, are affected by problems of the international location of the metal industries and by efforts to overcome disparities in production and foreign trade. While metal deposits are widely spread, many are concentrated in particular areas; and every country requires some metal which is not available within its own borders. The deposits themselves cannot be changed; all that can be done is to discover and exploit them more intensively. When the deposits are exhausted in any one country, needs must be supplied from foreign sources. It may happen, as was the case in the Upper Silesian iron industry and in Belgian zinc smelting, that large plants lose their domestic ore basis. They must then obtain other sources of supply either by ownership of foreign ore reserves or by means of long term contracts. The latter eventuality, however, transforms the economic basis of such smelting concerns; instead of being "mixed" mine and smelting concerns they become "pure" smelting concerns. If they cannot acquire foreign ores they may have to shut down, as was the case with the giant tin smelters erected in the United States during the World War. As a general proposition domestic ore needs begin to be met by imports (in addition to outright exhaustion of local supply) whenever production costs plus freight charges to the smelting plants are higher for domestic ores than for foreign ores.

Disparities in the distribution of metal reserves create important economic and political differences and conflicts—between private, fiscal and general interests, between one country and another. Governments are increasingly supplementing or supplanting mining legislation; they are also establishing or multiplying taxing agencies, creating state monopolies, introducing the principle of concessions instead of grants, the use of quotas and price fixing for domestic and foreign markets, the partial exclusion of foreign concessionaires and, finally, the imposition of tariffs. The situation is further complicated by the imperialistic policies of governments and monopolistic combinations which seek control of foreign mineral resources and the displacement of competitors.

The "metal politics" of different countries are of the utmost importance in the development of economic and international relations. When France proposes to prohibit the exportation of iron ore or to subject it to governmental control, it is obvious that the action would have far reaching results. One of the reasons advanced for the organization of Copper Exporters, Inc., was the diminution of the American copper ore reserves, the argument being that further depletion should be prevented by a reduction of copper metal exports. During the crisis the governments of Bolivia, the Federated Malay States, the Dutch East Indies, Nigeria and Siam have enforced a strict regulation of the output of tin, since unregulated production involves steep price declines, which might force both the industry and the state treasuries into bankruptcy. Colombia has established a board of control to restrict exports of platinum. Everywhere there

is a pronounced trend toward governmental intervention in the metal industries in an effort to equalize international disparities.

ALFRED MARCUS

See: MINING; MINING ACCIDENTS; MINING LAW; COINAGE; GOLD; BIMETALLISM AND MONOMETALLISM; IRON AND STEEL INDUSTRY; MACHINES AND TOOLS; TECHNOLOGY; INDUSTRIAL REVOLUTION; COMBINATIONS, INDUSTRIAL; CARTEL; RAW MATERIALS; NATURAL RESOURCES; IMPERIALISM.

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MÉTAYAGE. *See* FARM TENANCY; PEASANTRY; SMALL HOLDINGS.

METHOD, SCIENTIFIC. The progressive character of science shows that its essence is to be sought not in the content of its specific conclusions but rather in the method whereby its findings are made and constantly corrected. The term method denotes any procedure which applies some rational order or systematic pattern to diverse objects. As used with reference to science, its meaning varies from that of abstract, or formal, logic applicable to all statements to that of the technique which may be peculiar to a particular science or even to some special field in it (e.g. the method of just perceptible differences in psychology or the method of index numbers in economics).

This distinction makes it possible to eliminate current but needless methodologic controversies by recognition of the fact that the social sciences differ from one another and from the physical sciences in regard to their techniques while they all agree as to their general logic as sciences. It is well also to recognize that while in its oldest and widest sense the term science (like the German *Wissenschaft*) denotes all ordered and reliable knowledge - so that a philologist or a critical historian can truly be called scientific—the stricter sense of the word science makes it especially concerned with general laws which establish connections between diverse facts. The various sciences thus differ in the degree of generality which they have attained.

From the widest viewpoint scientific method may be regarded as the way of increasing the reliability of beliefs or assumptions by eliminating or minimizing as far as possible the errors and illusions which obstruct human knowledge. Science aims at stability of belief by cultivating rather than suppressing doubt. In constantly asking "Is it so?" it seeks to question all that can possibly be questioned. The mere resolution, however, to doubt all things is of little efficacy, as the illustrious case of Descartes shows. What is most in need of doubt is apt to appear as indubitable (e.g. innate ideas). There is needed therefore a technique for questioning every proposition so that a wider or more stable basis for the whole system of beliefs may be found.

Logic and mathematics are such techniques in that they show possible alternatives to usual ideas. The techniques for raising doubt as to assumptions concerning individual facts consist in showing possible contradictions between one factual assumption and another. To do this effectively we repeat the observation of what are supposed to be the facts, either under the same conditions or under varying conditions, so that distorting influences may be eliminated. Modern physical methods are thus used not only to make observations more accurate, that is, to obtain a refinement of perception unobtainable with the unaided senses, but also to prevent the common illusion of seeing what does not exist. In the case of facts not directly observable one relies on the method of questioning the evidence in their favor.

The foregoing considerations may thus be put positively: science is a method of basing beliefs on the best available evidence. Logical proof or demonstration, not only in geometry and arithmetic but in all the fields of science, reduces possible doubt as to a large number of propositions to that of a few simple principles. The proof of a proposition makes it impossible to deny it without denying the axioms and other propositions from which it is deduced.

From the nature of evidence it is clear that no one fact can prove another fact unless the two are connected by some constant or invariant relation. Scientific method is thus an effort to make explicit, and to test, the laws according to which phenomena are related to each other to form a system. A dictionary or a railroad time table is not generally regarded as a work of science. For the latter must be more than a collection of facts, even if they be organized according to some external order, such as the alphabetic or chronologic one. The ideal of science is to see the facts logically connected according to their essential nature, summarized in some small number of connecting laws or principles.

Thus far scientific method has been considered as a way of perfecting knowledge. Is it also a way of extending knowledge? If an affirmative answer is given, the obvious caution must be added that there are no magical rules which will enable man to discover all that is unknown—no more than there are rules enabling him to invent everything that he needs or to create great works of poetry or music. If there were such rules, he would long ago have discovered the causes of phenomena which for ages have puzzled and baffled. The verifiable history of science shows that there is an element of unpredictable good fortune and unaccountable genius in most great discoveries.

But while there are no rules or methods which will produce scientific discoveries or inventions, there are certain necessary conditions which must be observed in order not to make the effort at discovery impossible. Previous knowledge and reflection are such necessary (though insufficient) conditions. Great scientific achievements are never made by those who start with an open mind without any knowledge or anticipation of nature. In order to find something we must first look for it. And the process of formulating new hypotheses or new experiments to test old hypotheses, while it requires original insight, is necessarily dependent on logical deduction from previous knowledge. Deduction is thus a necessary part or instrument of research.

Confusion on this point has resulted from the Baconian myth of induction according to which

the true scientist begins with the observation of the facts without any anticipations of nature. It is important to realize that this is logically impossible and belied by actual history. Without an anticipatory idea or hypothesis we do not know what specific facts to look for and cannot recognize what is relevant to the inquiry. It is not easy to start with observing the facts, for to determine what are the facts is the very object of scientific inquiry.

While logical analysis or deduction can assure true conclusions only if we start with true premises, it aids scientific research and discovery in three ways. In the first place, it helps in detecting the questionable assumptions logically involved in what is believed to be the truth, and it multiplies the number of available hypotheses by formulating the possible alternatives to those which have been tacitly assumed. Logical reflection is needed to liberate one from the habit of regarding the familiar as the only possibility. In the second place, the logical deduction of its consequences makes clear the meaning of any hypothesis and thus assists in the process of testing or verifying it. Finally, the process of rigorous deduction is an aid in the attempt to steer clear of irrelevancies, and thus when the right principle is found it serves as a key to unravel our puzzles. This explains the great fruitfulness of mathematics in physical research. Such predictions as that of conical refraction by Hamilton, that of light pressure and electric waves by Maxwell and that of the bending of light rays and certain shifts in the spectrum by Einstein are a few striking instances of physical discoveries induced by purely theoretic consideration.

When in 1903 Bertrand Russell asserted that induction was more or less methodical guesswork, the intellectual world was rather shocked. This reaction was due to a false pride which makes people dislike to admit that guessing can be a part of scientific method. Nevertheless, such is clearly the case, whether the guess be called an intuition, an anticipation of nature or a working hypothesis. Scientific guessing is distinguished, however, by its methodical character, by the fact that it is recognized as a guess and that there is an organized way of testing its chances of being true.

The simplest form of induction is that of generalization from instances which are judged to be typical or representative of the classes to which they belong. Thus, if a certain serum cures X, Y and Z who suffer from pneumonia, there is a temptation to generalize that this serum is a cure for all cases of pneumonia. This is an inference which has greater or less probability according to the homogeneity of the class of cases called pneumonia. In physical nature, where uniformities are simpler and more readily observable, a single test as to whether or not a new organic compound is acid will be sufficient. In human affairs, where heterogeneity is very great, it is more difficult to determine to what extent certain instances are representative or typical of a special variety rather than of the whole class. It is thought, for instance, that because fifty or one hundred Jews or Chinese have certain characteristics, all the others have them. But here one is obviously laboring under the difficulty of having unknowingly selected some special group, such as those belonging to a special society engaged in a special industry or coming from a special geographic region. Hence to increase the reliability of inductions, as many instances as possible are taken at random; that is, distributed over wide ranges. In this way it is hoped that the fallacy of selection will be eliminated; that is, that the sample will be characteristic of the whole class rather than of some unrecognized variety. But no generalization can escape the possibility of being false or inadequate, because it is based on observed conditions which are themselves conditioned by unobserved ones which may change with time. The so-called principle of the uniformity of nature, or the maxim that like effects are brought about by like conditions, cannot do away with this difficulty, which arises from our limited knowledge.

The logically unsatisfactory character of mere generalization from samples or instances was recognized by Bacon, and methods of overcoming it were elaborated by J. S. Mill under the head of the methods of agreement, difference and concomitant variation. Mill, however, did not clearly discriminate between induction as generalization—"finding the causes"—and the element of proof. As direct prescriptions for discovering the causes of things these methods are, as the history of science shows, of little practical worth. For the very way in which these methods are formulated indicates that unless the causal "circumstance" is already included in the relevant factors, it cannot be discovered by any of these methods. These methods are, however, valuable in eliminating proposed causes. Thus the method of agreement shows that if a proposed cause is not a uniform antecedent it must

be rejected. The method of difference indicates that if a factor is not a differential one (one that is present in all instances when the phenomenon is present and absent in all instances when the phenomenon is absent) it is not a true cause. Finally, the method of concomitant variations proves that if two factors do not vary concomitantly they are not causally related. These methods of induction thus neither prove nor directly discover laws but they show which of a number of alternative hypotheses can be best verified.

It is principally in connection with the method of concomitant variations that statistics are useful in the establishment of laws or causal relations. Of course no empirical correlation can establish necessary relations. Indeed high correlations may often be discovered between factors which cannot have any real direct connection. But the establishment of correlations helps to confirm some hypotheses, and its failure helps to disprove others. For this reason it is a fallacy to suppose, as is often done today, that any developed science can remain in the statistical stage. Physics is not satisfied with empirical formulae, but always seeks to deduce them from some general principle, thereby establishing some real identity or invariant relation, e.g. the constancy of the amount of energy in all physical transformation. Thus what is called statistical mechanics is not empirical at all, but is rather a mathematical deduction from certain assumed relative frequencies of various minute configurations in nature.

In passing from scientific method as a whole to scientific method in the social sciences it is well to begin with the general admission that social phenomena are dependent on physical, biologic and psychologic factors. From this it follows that social phenomena are inherently more complex, depending on a larger number of variables. Hence the postulate of determinism, that everything is governed by law, does not assure the discovery in the social field of such relatively simple laws as prevail in physics. For obvious subjective and objective reasons experiments on men and societies cannot so readily be made or repeated as can experiments on samples of inert carbon or hydrogen. The former cannot be observed with the same degree of freedom, accuracy and detachment as the latter; and in the social field it is impossible to vary one factor at a time and to be sure that the others have remained the same.

In addition to these differences it is important to note that the temporal or historical factor enters into social phenomena to a much larger extent than into purely physical phenomena. Men, communities and customs grow; and the present complexion of such entities is a function of their past history, to an extent which is not true of physical entities. There are, to be sure, certain physical phenomena, such as hysteresis in magnetism, in which the past enters. But these are exceptional cases, whose dependence on history is expressible in a relatively simple function. This is certainly not true of religious, moral and political affairs: more history is needed for an understanding of the reaction of a Bulgarian to a Serb than for an understanding of the reaction of water to an electric current.

Because different peoples have had different histories it is hazardous to compare the institutions of one with those of another. In order to overcome this difficulty men like Comte and Spencer have resorted to the arbitrary hypothesis that all peoples must go through the same series of stages in their history and that therefore different peoples may be compared in the same stage of their development. But such oversimple a priori hypotheses are not supported by the facts of history or anthropology. The supposed law that all peoples must go through the nomad, or pastoral, stage before reaching agriculture cannot be true of peoples like the Peruvians, who never had a sufficient supply of cattle; and the supposed law that the matriarchal form of family must precede the patriarchal form is freely disregarded by tribes like those of British Columbia, which for social reasons of their own have veered in the opposite direction. A good deal of the work of men like Montesquieu must be rejected, on the ground that we cannot significantly compare the institutions of diverse societies which are not similarly organized. For this reason it is also hazardous to interpret puzzling phenomena as survivals of practises which were once rational in purpose. What seems simple and rational to an outside observer may not be so to those whose lives are bound up with it, and vice versa.

Nineteenth century writers did in fact stress the historic approach in the study of law, economics, politics and religion—even in art and philosophy. But it soon became obvious that no significant history can be written unless it is assumed that events are connected in certain ways, and this means an avowed or tacit theory of social causation. In geologic history the assumed principles of physical causation are

explicit and subject to direct experimental or differential observation. In social history the assumed principles of economic, political or social causation are apt to be tacit, but they are none the less operative in determining what are regarded as the facts, certainly in determining what are regarded as the leading and most significant facts. For no history can record everything, and what is selected is determined by the theoretic point of view. Intelligible history, then, presupposes theories of economics, politics, psychology and the like.

The distrust of pure theory comes also from those interested in the practical manipulation of present social situations; for purely abstract study affords an insight only into certain phases of life and does not provide the complete knowledge needed for determinate choices. Thus theoretic economics tells only what would happen under certain conditions if all other factors remained the same. Those, however, who begin with the study of concrete phenomena cannot make any prediction except on the assumption that certain conditions are bound to have certain results; that is, on the assumption of certain laws as to what is possible. Their theory is thus tacit rather than critically examined.

A more rational ground for the distrust of pure theory in the social field is the fact that every investigator feels free to use his own categories. If these are expressed in common words, all sorts of ill defined penumbras of values and meaning are attached to them and clarity becomes difficult of attainment. There can be no generally recognized set of categories expressed in technical terms without more attention to the purely logical problem of the relation of the various fundamental social categories to each other. But the search for a set of elemental categories in the social sciences, such that all others are combinations of them, is a long process which no one can hope to complete in a single lifetime. There are therefore bound to be as many sociologies, or sets of social laws, as there are sociologists, each of whom starts afresh because his predecessors have not demonstrated anything which he is bound to take into account.

There are thus two main schools of method in the social sciences. On the one hand, there are those who, like the mathematical or theoretical economists or those engaged in juristic theory, are willing to start with purely abstract rules or formulae, develop them rationally and correct them by other considerations so that the results fit the actual course of events. On the other hand, there are those who follow the historical and descriptive approach, which begins with ordinary notions and tries to refine them more and more by making them more definite, removing contradictions and supplementing them by fruitful analogies or comparisons.

It is often wise to begin by concentrating on what seems a typical instance or to pay special attention to a single case in which some essential social relation may be studied. We can thus, like the followers of Le Play, study the interplay of economic and other social factors by taking some cultural or geographic unit, e.g. a river valley. American anthropologists, following Boas, have used the concept of the culture area to great advantage. Instead of studying the American Indians as a whole, they take a special group and trace the pattern of its communal activity.

Such intensive study of special cases can obviously be fruitful only when they are in fact typical and when the student brings to his task a wide knowledge and a penetrating analysis of the relevant factors. The mere accumulation of particular facts is not and cannot of itself be enlightening nor can it widen scientific vision.

There has been considerable heated controversy as to whether the normative, or teleological, point of view is legitimate in the social sciences. This, however, involves two separate questions. The first is whether the investigator should pass judgment on events or social institutions on the basis of his own set of values. To do so is to introduce the investigator's personal preferences where what is needed is a study of the social objective. On the other hand, it is so difficult for most people to suppress their own evaluation of social situations—those who have preached this course, like Duguit and Gumplowicz, have failed to practise it—that it may be better to be frankly subjective than to pretend to an objectivity one does not really have. The right path obviously depends upon the investigator's equipment. The second question is whether social phenomena are determined by the purposes men have in mind or whether the latter are largely illusory or mere registrations of what objective circumstances determine men to do. Here as in other controversies the antithesis is too sharply drawn. If conscious human purposes are organically conditioned, there can be no good reason for ignoring them as clues to the whole social process. All social acts are regulated, and most men sometimes deliberate upon, and often ask, what

is the proper aim to be followed. Thus language, clothing, the ritual of business, courtship and even leave taking of the dead are regulated by social custom in such a way that a knowledge of social purpose is certainly needed for a full understanding of what is going on. On the other hand, men often take a microscopic view of their own conduct, while the social investigator must take a macroscopic view. The man who marries and brings children into the world does not usually aim at increasing the national population or the voting strength of his religious group. Men also are undoubtedly under serious illusions as to their purposes in their action and as to the extent to which the latter is really as planned as their vanity makes it out in retrospect. Men do calculate and make mistakes. But the extent to which this is true is an empirical question to be determined by actual measurement and not to be affirmed or denied a priori.

Until recently scientific method has been studied mainly by logicians interested exclusively in the nature of individual thought. One may, however, ask why it is that men who are careful thinkers in their specialty (e.g. in physics) are generally no better than the rest of the community when they reason about religion, politics or social and domestic economy. This suggests that scientific method is a trained and specialized habit which like all trained habits is socially conditioned. There is doubtless some organic basis for the fact that men put more of their intellectual as well as of their other energies and attention into some one field. But there can be no doubt that social organization largely determines the special or professional standards of care which are required in different fields of learning. Thus it is habitual for physicists and chemists to distrust naked observations and to resort to various mechanisms, repetitions and mathematical calculations to establish their facts; for biologists to use controls to check their experiments; for philologists to verify their quotations and references; or for lawyers to establish the relevance and competence of testimony. These cautions are organized so that no one can omit them and maintain his professional standing. Sometimes indeed these habits become mechanical. We forget their rationality and oppose any extensions or improvements of them which men of genius discover; but the merits of these progressive extensions are bound to be recognized so long as science by its fundamental procedure remains a self-corrective system.

Scientific method is generally thought of as peculiar to recent western civilizations. This view has been supported by sensational reports about weird, magical religions and cosmological beliefs of primitive peoples and even of mediaeval Europe, as if similar beliefs could not also be found among those called civilized. Contemporary anthropologists have, however, shown the wide prevalence of careful technical knowledge which is deliberately cultivated among most primitive hunters, fishermen and artisans as well as among priests and medicine men. Thus many peoples, like the ancient Chinese, indicate a deliberate study of how to prepare for certain modes of warfare. When, however, one compares the cumbrous learning of Egypt and other oriental countries with the rational science which the Greeks discovered from the days of Thales and Pythagoras to those of Archimedes and Ptolemy, one can well say that scientific method is a Hellenic discovery or invention, in the sense that the Greeks discovered the way of strictly logical demonstration, thereby using simple and comprehensive principles to transform vast conglomerations of miscellaneous facts into ordered systems. This is connected not only with the aesthetic sense of the Greeks but also with their habits of free society. Free doubt and free inquiry naturally go together with freedom from paralyzing fear or awe of authority. Oriental treatises are generally the stark dicta of masters to submissive disciples. The Greeks characteristically wrote dialogues, reasoned arguments or communications to friends. In any case the Greeks certainly discovered and developed mathematics as the art of proving general theorems.

Modern science is frequently not as rigorous in its procedure, but it has greater facilities for cooperation in its search. Modern methods of investigation depend upon a vast system of learned societies, communications and publications which make the results of any man's research very soon available to all others interested. Also through numerous records and libraries different generations can utilize such work of their predecessors as did not find immediate application.

While it is generally recognized that modern technology is the outcome of the development of scientific method, the reverse is also true in a limited way. Abstract mathematics has been enlarged by application to the problems of physics and the latter has been enriched by facing the problems of engineering. In the theoretic mechanics of Galileo there is an acknowl-

edgment of his observations of the methods followed by the expert workers in the Venetian arsenal; and the ideologists of the present Soviet regime in Russia are emphasizing the technological as well as the economic development which conditioned the work of men like Newton. In reply it might be urged that the history of medicine and technology shows that interest in practical applications does not always advance scientific methods and indeed that experimentalists of a very high order of rectitude, like the late Professor Michelson, were afraid to go into any field of physics having immediate practical applications. But waiving the latter point and admitting that scientific method may be enlarged by practical applications, one must still be on guard against confusing questions of historic conditions with those of the logical content of a book like Newton's *Principia*. In any case there can be no reasonable doubt that the latter was molded by the reading of Euclid and Pappus as well as of Kepler and Galileo.

In raising the question as to the social needs which make for scientific method it is well to recognize at the outset that the suspension of judgment which is essential to the latter is difficult or impossible when the demands of immediate action are pressing. When a house is on fire, its owner must act quickly and promptly; he cannot stop to consider the possible causes or even to estimate the exact probabilities involved in the various alternative ways of reacting. For this reason those who are bent upon some specific course of action often despise those devoted to reflection; and certain ultramodernists seem to argue as if the need for action guarantees the truth of one's decision. But the fact that a person must either vote for candidate X or refrain from voting does not of itself give him adequate knowledge. The frequency of regrets makes this obvious. Wisely ordered society is therefore provided with means for deliberation and reflection before the pressure of action becomes irresistible. In order to assure the most thorough investigation all possible views must be canvassed, and this means toleration of views which are *prima facie* most repugnant.

In general the chief social condition of scientific method is a widespread desire for truth strong enough to withstand the powerful forces which make people either cling tenaciously to old views or else embrace every novelty because it is a change. Those who are engaged in scientific work need not only leisure for reflection and material for their experiments but also a community which respects the pursuit of truth and allows freedom for the expression of intellectual doubt as to its most sacred or established institutions. Fear of offending established dogmas has been an obstacle to the growth of astronomy, geology and other physical sciences; and the fear of offending patriotic or respected sentiment is perhaps one of the strongest hindrances to scholarly history and social science. On the other hand, where people indiscriminately acclaim every new doctrine, the love of truth becomes subordinated to the desire for intellectual novelties. The safety of science depends on the existence of men who care more for the justice of their methods than for the value of any results obtained by using them. For this reason it is unfortunate when scientific research in the social field is largely in the hands of pedagogues and others who are generally not in a favorable position to oppose established or popular opinion.

These reflections may be stated in another way: the physical sciences can be more liberal because there is more certainty that foolish opinions will be readily eliminated by the shock of facts. In the social field, however, no one can tell how much harm may come of foolish ideas before their foolishness is finally, if ever, demonstrated. None of the precautions of scientific method can prevent human life from being an adventure, and no scientific investigator knows whether he will reach his goal. But scientific method does enable large numbers to walk with surer step. By analyzing the possibilities of any step or plan it becomes possible to anticipate the future and adjust oneself to it in advance. Scientific method thus minimizes the shock of novelty and the uncertainty of life, so that man can frame policies of action and of moral judgment fit for wider outlook than those of immediate physical stimulus or organic response.

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See: SCIENCE; PHILOSOPHY; LOGIC; DETERMINISM; ECONOMICS; POLITICAL SCIENCE; PSYCHOLOGY; SOCIOLOGY; ANTHROPOLOGY; JURISPRUDENCE; HISTORY AND HISTORIOGRAPHY; STATISTICS; PROBABILITY; CORRELATION.

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METHODISTS. *See* SECTS.

METROPOLITAN AREAS. Metropolitan areas and their problems are not new nor is the dislocation between population and the units of local government, the characteristic of such areas, a novelty. London in the latter part of the eighteenth century and Philadelphia in the second and Boston in the third quarter of the nineteenth century faced acute metropolitan problems. It is only in the twentieth century, however, that metropolitanism has become universal and of vast quantitative importance. The relation of population to the center of an urban region has always been the resultant of land values and the means of transportation. Industry and population tend to escape the high property values of the center. The movement may be checked by artificial barriers, such as the walls of the mediaeval city, or by natural ones in the form of hills, rivers or marshes; but the principal restraint upon it has been the cost in time and money of transportation. The sudden relaxing of this restraint through the common use of the automobile has suddenly created metropolitan areas of unprecedented size and importance.

The mediaeval city fast within its walls could grow only vertically. When the walls disappeared before the potentialities of gunpowder, population still spread slowly because in the absence of means of mass transportation the ordinary man must live near his work. With the development of steam railways came "satellite" communities, residential or industrial, dependent economically on the center but far enough removed from it to raise no problems of government. The trolley car gave a strong impetus to the outward movement, but only cheap automobiles and concrete highways (built with taxes for the most part contributed by the center) made it possible for vast numbers of urban workers to seek the countryside and for industries to find at a distance from the center cheap land without the loss of their labor supply. At the same time the old city has not only maintained but actually increased its dominance as a center of trade, banking, amusement and culture. The whole increasing population—the overtaken farmer as well as the invading suburbanite—more and more seek the stores, theaters, churches and professional services of the center to the detriment of the crossroads store, the wayside church and the country doctor. A nation has been put on wheels, and its mobility has created metropolitan regions with common political problems and no adequate machinery to solve them.

It is difficult to define exactly just what constitutes a metropolitan area. The Bureau of the Census has adopted what might be called the definition of continuous density: the area is made up of the "central city or cities" and "all adjacent and contiguous civil divisions having a density of not less than one hundred and fifty inhabitants per square mile." Usually there are also included civil divisions of less density directly contiguous to the central city or entirely or nearly surrounded by minor civil divisions

having the required density. A broader definition based on economic and social conditions is the area within which there is a large daily movement of population to and from the center for work, trade, amusement or other purposes. This definition will include in the metropolitan area relatively distant subcenters and often large stretches of open country. The typical metropolitan area presents aspects of both uniformity and diversity. No metropolitan area is identical with a single compact urban community. This fact affects the means available for the solution of the metropolitan problem.

The problems which confront a metropolis are similar in kind to those of any local government. They derive their peculiar character from the absence of political integration in the metropolitan community. The New York metropolitan area, according to the Committee on Regional Plan of New York and Its Environs, contained in 1925 the whole or parts of 22 counties, 290 incorporated places and 146 unincorporated towns or townships; its estimated population in 1927 was put at 10,000,000. The Philadelphia metropolitan area as described by the Regional Planning Federation of the Philadelphia Tri-State District consisted in 1926 of 14 counties, 129 incorporated places and 211 townships; its estimated population was 3,000,000 in 1926. These are only outstanding cases of what is to be found in each of the ninety-six metropolitan districts enumerated in the 1930 census. In no case is there any unit of government corresponding to the metropolis as a whole. Transportation, to take a single example, is an important element in local life with which local governments must have a great deal to do. It is obvious that the transportation problem in a metropolitan area cannot be satisfactorily handled by hundreds of separate units whose only method of common action is more or less accidental cooperation. Many of these metropolitan problems can be solved only by state centralization or by metropolitan consolidation.

The principal problems calling for metropolitan integration relate to four main categories of functions: community planning, including provision not only for streets but for parks and other recreational facilities; public works and utilities, such as water supply, sewerage, mass transportation and to a lesser extent the furnishing and control of gas, electricity and telephone services; safety, including the maintenance of a police force and an adequate public health authority; and, finally, the establishment and conduct of institutions for the care of the poor and the sick and for public education. These problems arise from physical, administrative or financial causes or from combinations of such causes. Nature demands that a whole region be planned and that a natural drainage area be treated as a unit. Flying thief and hurrying pestilence will not pause for the boundaries of petty municipalities and townships. A common standard of essential services cannot be maintained by a great central city and wealthy suburbs and by the poorer units to which working men have fled to escape the high cost of city life. This is peculiarly true where, as in education, per capita costs often vary inversely with the size of the unit.

As long as the absence of means of transportation allowed cities to grow only by the addition of new streets and buildings to the already developed area, the process of annexation although it often lagged far behind physical development could be counted on in the long run to adjust the relations between the real and the political city. The recent outthrust of population, however, has been so overwhelmingly rapid and so far flung in its extent that annexation in most cases cannot even be thought of as a solution of the metropolitan problem. Sometimes the flood has engulfed numerous outlying municipalities with traditions of independent existence, ample resources and high local patriotism. Often the outward moving population has not uniformly occupied the area; between transportation lines and places favorable to residence or industry great stretches of open country remain, in which the conditions of life are not typically urban, interspersed with concentrated settlements which make it impossible to dissect them from the metropolis. Both these conditions present almost insuperable obstacles to annexation. The independent municipalities of fair size and strong local traditions persistently resist such unions and since the annexation of Allegheny to Pittsburgh in 1907 no serious attempt has been made to compel the annexation of such units by legislative fiat. Moreover the diversity in the character of the units which make up a metropolitan area makes annexation an expedient of very doubtful value. Only one great city, Los Angeles, has undertaken annexation on a metropolitan scale and its experience has illustrated the dangers of the situation. Property owners in every part of the city, irrespective of the nature of their immediate surroundings, seem to feel themselves entitled to all the usual services

rendered by a city government. A great stimulus is thus given to municipal improvements in advance of population and to expenditures far in excess of the tax contributions which can be made by the outlying sections.

Since annexation cannot and probably should not be made to meet the situation, special districts have often been created to deal with some exceptionally acute problem or problems. The first of these was the Metropolitan Police District of London, established in 1829 at the instance of Sir Robert Peel; since then they have become relatively common. In the United States and Canada alone from 1910 to 1930 some twenty such districts were set up or their range of activities materially amplified. Special districts of this kind may be divided into four classes: those in which the governing body is appointed by and responsible to the central government; those in which the governing body is made up of representatives chosen by the governing bodies of the constituent units; those in which the governing body is elected directly by the people of the district; and those in which the governing body represents chiefly the interests concerned in the activities of the district.

The most famous example of the first class is the Metropolitan Police District of London. In the United States the most notable example is the Massachusetts Metropolitan District Commission, which since 1919 has dealt with metropolitan sewers, water and parks in the Boston area. To the second class belong numerous districts established in Great Britain and the British colonies, among them the Metropolitan Water Board of London set up in 1902 and the Montreal Metropolitan Commission created in 1921. The syndicates of communes provided for by the French municipal code, and the wartime and post-war municipal "unions" of Germany fall in the same category. In the United States the only clear cut example is the Metropolitan Water District of Southern California, established in 1930 to bring water from the Colorado some two hundred and fifty miles away to cities in the Los Angeles coastal plain. The third class includes the Sanitary District of Chicago created in 1889, the East Bay Municipal Utility District in California created in 1923 and some others. The fourth class is well represented by the Port of London Authority established in 1908 and at present consisting of eighteen members elected by payers of port dues, wharfingers and owners of river craft and ten members chosen by public bodies. Its successful conduct of a colossal enterprise would seem to invite imitation, but it has met with considerable political opposition.

The Port of New York Authority deserves special attention, as it falls readily into none of the above categories. It was created by compact, supported by concurrent legislation, between the states of New York and New Jersey in 1921. The commission consists of twelve members, six appointed by the governor of each state. They serve without pay for terms of six years. Its duties are to prepare a comprehensive plan for the development of the port, secure the best use of its existing facilities and construct, own and operate bridges, tunnels and other utilities. The running expenses of the commission are paid by the two states in equal proportion. It constructs works only by the sale of bonds secured by the pledge of the works themselves and their revenues. From the point of view of area and population concerned—1500 square miles and 8,000,000 people—this is the most important of ad hoc metropolitan authorities. Besides working out a comprehensive plan, parts of which have been carried out in cooperation with railroads, it has built the George Washington Bridge and been entrusted with the operation of the Holland Tunnel.

Although the services rendered by many of these special districts have been of enormous value, it is obvious that by their creation the metropolitan problem as a whole cannot be solved. It can only be palliated. Where several important functions have been entrusted to a single commission, as in the case of the Massachusetts Metropolitan District, one approaches very close to the federated city. But two good examples of this type of organization exist. One is the city of Greater Berlin, created by act of the Prussian legislature in 1920. The then existing city of Berlin and a very large surrounding area were included in this scheme. A government similar to that of other Prussian cities was set up for the whole of the *Grossstadt*, which was at the same time divided into twenty administrative districts, each with its own elective council, district burgomaster and administrative board (*Magistrat*). The municipal assembly of the *Grossstadt* was given the power to determine by ordinance the distribution of powers between the *Grossstadt* and the administrative districts. The plan has worked badly in certain respects. The great municipal assembly of 225 members became a field of party jousting, while the twenty administrative district councils became

practise grounds where the parties tried out their strength. In 1931 a law was passed modifying the organization of the *Grossstadt* in certain important particulars. This law provided a city committee, elected by the municipal assembly from its own number by proportional representation, to carry on most of the routine work formerly left to the unwieldy assembly. It also strengthened the power of the chief burgomaster and required the district councils to meet in private. It did not, however, seriously alter the division of powers between the *Grossstadt* and its districts. The districts have neither taxing nor borrowing power, and the budget is enacted by the municipal assembly and *Magistrat* of the *Grossstadt* in detail for both the *Grossstadt* and the districts. Thus the districts do not enjoy any real autonomy. Just what the districts can do is prescribed in the law; how they can do it is set forth in general regulations made by the central *Magistrat*. The central *Magistrat* may veto the acts of a district council which exceed its powers or are contrary to the interests of the city as a whole. The system is a deconcentration of administration rather than a true decentralization. Nevertheless, the matters left to the districts to administer are of great importance. The *Grossstadt* deals with such subjects as gas, water supply, electrical energy, sewers, fire protection and savings banks. All the other local functions, headed by education, are administered by the districts. Two interesting provisions are made to secure harmony between the districts and the *Grossstadt*. The district councils are made up in part of the members of the municipal assembly from the district; and the burgomasters of the several districts meet regularly with the chief burgomaster and *Magistrat* of the *Grossstadt* to discuss the budget and other important matters. There is much contention in Berlin between those who would prefer a higher degree of centralization and those, especially persons connected with the government of the districts, who would prefer a greater degree of district autonomy. But so far neither side has been able materially to alter the situation.

A much better example of the federated municipality is the Administrative County of London, which was established in 1888. Its boundaries include only a small part of the 4758 square miles which may properly be included in the London metropolitan area; but for 117 square miles of the area with a population of approximately 4,500,000 it provides a solution, which is at least extremely suggestive, of the relation between local and general interests in a metropolis. The County Council and the twenty-eight borough councils functioning within the Administrative County do not differ materially in organization and procedure from the corresponding local bodies in other parts of England. They are unique only in the distribution between them of the usual functions of local government. In this division it is difficult to see any consistent principle. Some matters belong exclusively or almost exclusively to the County Council, such as fire protection, care of the insane, reformatories, education, poor relief and some licensing powers. Control of drainage is logically divided between the county and the boroughs, main drainage going to the one and local sewers to the others. With regard to streets, however, confusion prevails. Jurisdiction over street openings and improvements belongs to the County Council, but the actual construction and maintenance of all streets except the Thames bridges and embankment are left to the boroughs, which also light and clean the streets and superintend the collection and disposal of refuse. The County Council alone has power to operate tramways, but the borough councils can veto (and have frequently done so) any projected tram lines through their territory. In the field of public health the authorities are even further jumbled. As to parks and open spaces both have concurrent powers. Both have housing powers, except that the boroughs may not exercise such powers beyond their own limits. Both deal with the enforcement of the building acts. The County Council deals with the gas companies, but some of the boroughs maintain their own electric plants. Such an arrangement cannot produce entire satisfaction. Englishmen jeer at the borough councils as representing the nadir of English political life. When the Royal Commission on London Government in 1921 and 1922, however, came to take its seven volumes of testimony, not a single witness appeared before it to argue that for a municipality as large as London anything but this dual arrangement was possible. Although imperfect it works.

A better picture of the complexity of the metropolitan problem and of the added complications which come from attempts to solve it may perhaps be attained by a rapid glance at the London area as a whole. At its center lies the City of London (1.03 square miles in area) with its peculiar mediaeval constitution. Just outside it is the Administrative County (117 square miles in area) with its twenty-eight

boroughs and outside that a congeries of counties and smaller units within and without the Metropolitan Police District (691.8 square miles in area). Inside the Police District, for census purposes called Greater London, are parts of five counties, three county boroughs, twelve municipal boroughs, fifty-nine urban districts and nine rural districts. The area of the five so-called "Home Counties" (Essex, Hertford, Kent, Middlesex and Surrey), which is all within the metropolitan influence of London, is 4758 square miles, and within these five counties are more than two hundred of the ordinary units of local government. This is complexity enough, but attempts to solve certain metropolitan problems have doubled the confusion. There is a London main drainage area, including the Administrative County and the whole or parts of sixteen other units, under the control of the County Council. There is a Metropolitan Water Board with jurisdiction over a district of 530 square miles partly within and partly without the Police District. The London and Home Counties Electricity District handles the major electric light and power problem in a region of 1797 square miles, while the London and Home Counties Traffic Advisory Committee goes even further afield. In addition there are the Port of London Authority, the Port of London Sanitary Authority (a manifestation of the city corporation) and the Thames Conservancy and Lee Conservancy boards. Except for the abolition of boards of guardians in 1929 nothing has been done in a generation but to complicate the situation further.

It is impossible to prophesy the trend of metropolitan government except for the probability of a gradual increase in the number of special districts. Several attempts have been made in the United States to apply the federated city idea to the solution of the metropolitan problem. Such a project came very near adoption in Pittsburgh in 1929 and plans are now on foot for its renewal. In Boston an active committee appointed by the mayor has been working on such a proposal for the past three years, although without any legislative success. In Cleveland and St. Louis plans of this sort have been formulated and widely supported. No other general solution of the metropolitan problem has so far received real backing anywhere in the United States.

The testimony collected by the Royal Commission on London Government clearly brought forth the evils of the present situation there. But consideration of the testimony evoked no unanimity as to means of solving the problem. The commission divided sharply within itself. Four members recommended a mildly innocuous addition to the complexity in the shape of a London and Home Counties Advisory Committee with somewhat vague functions relating to transport, town planning, housing and main drainage. Two groups of two members each recommended more drastic measures, but they differed widely and neither had the slightest chance of official or popular support. The fact is that the opposition of the influential county councils and of the larger independent municipal units within the area insures the defeat of any plan for extending the Administrative County over a larger area, and no other practical scheme can be suggested.

American experience is in the same direction. Even a scheme of federation allowing considerable autonomy to existing units is received with suspicion in the outlying communities. Political leaders in the suburban municipalities fear the loss of power. Residents of unincorporated areas are afraid of possible increases in taxation. Inequalities between the central city and outlying communities in the basis of assessment of property for taxation are difficult to adjust. Resistance is encountered also from the officials and politicians of the central city, who see diminution of their own importance in the transfer of certain city functions to the metropolitan government. Selfish interests and local politicians join hands in obstructing the development of metropolitan institutions. One reason for the relatively rapid creation of special districts is that they involve no interference with the existing machinery of local government.

On the other side must be counted the ambition of cities to enjoy as high a census rating as possible—a poor but very powerful motive—and the pressure which unsolved problems and high taxation exert in various parts of the metropolitan area. There are also groups which are steadily pressing on the public the necessity for some sound solution of the metropolitan problem. The city planners were the first to call attention to the phenomena of metropolitanism, and they have continued to take the lead in urging an intelligent, unified treatment of the problems of the metropolis. Their views have been ably seconded by municipal reform organizations, by the press and by chambers of commerce, although it must be admitted that the prospect of a "bigger city" has been most often

the prevailing motive in stimulating newspapers and commercial organizations to activity.

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See: CITY; CITY AND TOWN PLANNING; REGIONAL PLANNING; SUBURBS; MUNICIPAL GOVERNMENT; COUNTY-CITY CONSOLIDATION; ADMINISTRATIVE AREAS; MUNICIPAL CORPORATION; HOME RULE; COMPACTS, INTERSTATE; MUNICIPAL TRANSIT; LOCATION OF INDUSTRY.

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METTERNICH-WINNEBURG, FÜRST CLEMENS WENZEL LOTHAR (1773–1859), Austrian statesman and diplomat. Appointed foreign minister shortly after Napoleon's victory at Wagram, Metternich set out to gain time in which Austria might recuperate from her succession of disastrous wars. For three years he held the balance between France and Russia, maintaining friendly relations with both until Austrian preparations should be completed; and even after he was convinced that Napoleon's empire was doomed he was unwilling to see the Napoleonic power replaced by Russian preponderance in Europe. At the Congress of Vienna he used the weight of his authority to effect territorial compromises and succeeded very largely in realizing his own program. Within the brief period of five years Metternich had raised Austria to the first rank among the European powers.

Metternich's untiring efforts, particularly after his elevation to the chancellorship in 1821, to preserve the essential features of the social and political status quo may be explained both by the peculiar needs of the Austrian Empire and by his own deep seated personal convictions. National unification and popular sovereignty constituted in his eyes not only a threat to the integrity of the state but a perpetuation of revolutionary heresies. Looking at social and political problems exclusively from the standpoint of the governing classes he had little sympathy with the aspirations of middle class liberals and nationalists. Since his early days in revolutionary Strasbourg and Mainz he had adhered unswervingly to his belief that the French Revolution in its overhasty attempt to emancipate the human spirit had seriously undermined religious morals, economic life and government; and that the movement, which was essentially an outgrowth of the "presumption" of the middle classes posing as "the people," had gained momentum only as a result of the weakness of the governments of Europe. Like Burke, Metternich sought human progress in historical evolution rather than in violent revolution. Declaring that the real task of government consisted in promoting the general welfare, in preserving order, in respecting historically acquired rights and in reforming slowly according to the needs of the country he used the full power of the state to control or abolish the press, secret societies, university agitation and all other manifestations of the revolutionary spirit. Although he postponed and obstructed the realization of liberalism and democracy he helped to bring order and an opportunity for recovery after twenty-five years of upheaval and conflict.

Metternich's views struck a sympathetic chord throughout Europe and gained for him a tremendous prestige among his contemporaries. Working in close harmony with the Prussian government he was able to put his ideas into practise throughout Germany and Italy (Carlsbad Decrees of 1819). But he was eager to extend what has been called his "system" to all of Europe. He therefore made himself the champion of the idea of European solidarity, of general control by the great powers (the Pentarchy), of common resistance to a common foe. Eventually he carried even Alexander of Russia with him (Troppau Protocol of 1820). But while Metternich remained to the end of his life the exponent of stability, peace and European solidarity, the world grew away from him. Under Canning and Palmerston the concert of the powers broke up. The Greek revolution and the revolutions of 1830 were staggering blows at his prestige and influence. He remained the *rocher d'ordre* but even in Austria his system became increasingly difficult to maintain and was swept away by the Revolution of 1848.

WILLIAM L. LANGER

Consult: *Aus Metternichs nachgelassenen Papieren*, ed. by Richard Metternich-Winneburg and A. von Klimkowtröm, 8 vols. (Vienna 1880–84), tr. by Mrs. A. Napier and G. W. Smith as *Memoirs of Prince Metternich, 1773–1835*, 5 vols. (London 1880–82); Mazade, Charles de, *Un chancelier d'ancien régime* (Paris 1889); Lorenz, Ottokar, "Fürst Metternich" in his *Staatsmänner und Geschichtschreiber* (Berlin 1896) p. 1–94; Demelitsch, Fedor von, *Metternich und seine auswärtige Politik* (Stuttgart 1898); Molden, Ernst, *Die Orientpolitik des Fursten Metternich 1829–1833* (Vienna 1913); Westphal, Otto, "Metternich und sein Staat" in *Oesterreichische Rundschau*, vol. xix (1923) 901–17; Groos, Karl, *Fürst Metternich, eine Studie zur Psychologie der Eitelkeit* (Stuttgart 1922); Meyer, A. O., in *Archiv für Politik und Geschichte*, vol. ii (1924) 134–66; Srbik, Heinrich von, *Metternich, der Staatsmann und der Mensch*, 2 vols. (Munich 1925); Paléologue, Maurice, *Romantisme et diplomatie, Talleyrand, Metternich, Chateaubriand* (Paris 1924), tr. by A. Chambers (London 1926); Wertheimer, Eduard von, "Gibt es einen neuen Metternich?" in *Forschungen zur brandenburgischen und preussischen Geschichte*, vol. xxxviii (1926) 339–67; Bibl, Viktor, *Metternich in neuer Beleuchtung* (Vienna 1928); Kittel, E., "Metternichs politische Grundanschauungen" in *Historische Vierteljahrschrift*, vol. xxiv (1927–29) 443–83; Woodward, Ernest L., *Three Studies in European Conservatism* (London 1929); Herman, Arthur, *Metternich* (London 1932).

MEYER, EDUARD (1855–1930), German historian. Meyer's life is unique in its simplicity and concentration on a single goal. He was born in Hamburg, where he received an excellent classical education in the Johanneum. While still at school he formed the project of writing a general history of the ancient world, which he never abandoned, organizing his life accordingly. In the University of Leipsic he studied the oriental languages exclusively and after graduation spent some years at Constantinople as tutor in an English family. He returned to Germany and taught in the universities of Leipsic, Breslau and Halle and finally went to Berlin in 1902. In 1884 he published the first volume of his most important work, *Geschichte des Altertums*, devoted to the history of the ancient Orient, and added to it in rapid succession four more volumes, which brought the narrative down to the time of Philip and Alexander. During the composition of his magnum opus and after the completion of its first five volumes he wrote numerous articles and books, in which he treated competently and with acumen various problems of ancient history: Egypt, Palestine, Babylonia, the Hittites, Greece and the Hellenistic world, Rome, early Christianity, problems of method and of economic evolution. The World War and the subsequent period of reconstruction prevented him from finishing his *Geschichte des Altertums* and from completely revising the first volumes.

Meyer's great contribution lies in the fact that he was the first to give a presentation of ancient history as a whole, as a part of *Universalgeschichte*—not as a generalization based on second-hand information, but as an original contribution built up on a solid and lasting foundation. His knowledge of oriental languages made it possible for him to analyze and to interpret the oriental sources in the same masterly way in which he interpreted the Greek and Latin. The result was a well balanced unit, the first real history of the ancient world. No phase is neglected: although political history occupies the foreground, social and economic factors, religious development, intellectual currents and artistic evolution are not neglected. In his conception of history Meyer was a rationalist and paid no attention to the irrational. His theoretical views, which were often severely criticized, are set forth in his introduction to his history and in various essays. He conceived of history as a result of interaction between free will and accident; no historical laws exist; history is individual and never repeats itself; furthermore its presentation is always subjective and therefore never final. History moves in cycles, of which ancient history forms one; modern history repeats,

mutatis mutandis, the various periods of ancient history.

M. ROSTOVTZEFF

Important works: *Geschichte des Altertums*, 5 vols. (Stuttgart 1884–1902; vols. i–ii, 2nd–3rd eds. 1910–31); *Geschichte des alten Aegyptens* (Berlin 1887); *Die Entstehung des Judenthums* (Halle 1896); *Die Israeliten und ihre Nachbarstämme* (Halle 1906); *Der Papyrusfund von Elephantine* (Leipsic 1912, 2nd ed. 1912); *Reich und Kultur der Chetiter*, Kunst und Altertum, vol. i (Berlin 1914); *Sumerier und Semiten in Babylonien* (Berlin 1906); *Forschungen zur alten Geschichte*, 2 vols. (Halle 1892–99); *Geschichte des Königsreichs Pontos* (Leipsic 1879); *Blüte und Niedergang des Hellenismus in Asien*, Kunst und Altertum, vol. v (Berlin 1925); *Caesars Monarchie und das Principat des Pompejus* (Stuttgart 1918, 3rd ed. 1922); *Ursprung und Anfänge des Christentums*, 3 vols. (Stuttgart 1921–23); *Kleine Schriften*, 2 vols. (Halle 1910–24; vol. i, 2nd ed. 1924).

Consult: Wilcken, U., and Jaeger, W., *Eduard Meyer zum Gedächtnis* (Stuttgart 1931); Otto, W., "Eduard Meyer und sein Werk" in *Zeitschrift der deutschen morgenländischen Gesellschaft*, vol. x (1931) 1–24; Ehrenberg, V., in *Historische Zeitschrift*, vol. cxliii (1930) 501–11.

MIASKOWSKI, AUGUST VON (1838–99), German economist, agrarian reformer and statistician. Miaskowski was born in Livonia. His family originally came from Poland and belonged to the bourgeoisie rather than to the landed aristocracy in the Livonian caste state of that period. The social milieu from which he came exerted a decisive influence upon his political views as well as upon his scientific position. After a legal education Miaskowski became an administrative official in Riga. He championed the interests of the bourgeoisie against the landed nobility, which clung tenaciously to its old privileges, and played an important role in the reform activity which aimed to complete the emancipation of the serfs in the Baltic provinces. His participation in this movement led him to concentrate his interests upon the examination and solution of the agrarian problem. During his professorship at the University of Basel he endeavored to elucidate the historical evolution of the *Allmende* system characteristic of Swiss agriculture. While teaching at the University of Breslau he wrote his comprehensive work on inheritance law and land distribution in Germany. This book, Miaskowski's masterpiece, contains also his agrarian program: he proposed to strengthen the peasant middle class, whose emancipation he had championed in Riga, by means of the elaboration and extension of the system of inheritance intended to prevent excessive subdivision of the land, whereby one of the heirs receives the entire landed estate and compensates the remaining heirs in other forms. The same motives inspired him when he opposed in the German Agricultural Council (Deutscher Landwirtschaftsrath) the grain tariff increases, which he regarded as unduly favoring the interests of the large landowners. Miaskowski may be grouped with the realistic-historical school of economists which dominated German political economy during the last third of the nineteenth century

AUGUST SKALWEIT

Important works: *Isaak Iselin. Ein Beitrag zur Geschichte der volkswirthschaftlichen, socialen und politischen Bestrebungen der Schweiz im 18. Jahrhundert* (Basel 1875); *Die Verfassung der Land-, Alpen- und Forstwirthschaft der deutschen Schweiz in ihrer geschichtlichen Entwickelung vom XIII. Jahrhundert bis zur Gegenwart* (Basel 1878); *Die schweizerische Allmend in ihrer geschichtlichen Entwickelung vom XIII. Jahrhundert bis zur Gegenwart*, Staats- und sozialwissenschaftliche Forschungen, vol. ii, pt. iv (Leipsic 1879); *Das Erbrecht und die Grundeigenthumsvertheilung im Deutschen Reiche. Ein socialwirthschaftlicher Beitrag zur Kritik und Reform des deutschen Erbrechts*, Verein für Socialpolitik, Schriften, vols. xx, xxv, 2 vols. (Leipsic 1882–84); *Agrarpolitische Zeit- und Streitfragen. Vorträge, Referate und Gutachten* (Leipsic 1889); *Das Problem der Grundbesitzverteilung in geschichtlicher Entwicklung* (Leipsic 1890).

Consult: Bücher, K., "Nekrolog auf August von Miaskowski" in K. Sächsische Akademie der Wissenschaften, Leipsic, Philologisch-historische Klasse, *Berichte*, vol. lii (1900) 351–58.

MICHEL, HENRY (1857–1904), French political theorist. In addition to being a journalist Michel spent his entire life lecturing on philosophy, first in *lycées* and later in the University of Paris, where he held a chair in the history of political ideas. He was throughout his life a champion of a thoroughgoing individualism, the virtual disappearance of which from political life and thought he traced in his chief work, *L'idée de l'état*. It is this work which forms his distinctive contribution to social philosophy. In Michel's eyes the rights of the individual are anterior to those of society (which is after all but an aggregate of individuals) and are sacred against the perpetually encroaching claims of the state. With this assumption he examines the development of political ideas in France since the revolution and comes to the conclusion that true liberalism died with eighteenth century individualism. Not only are Jacobins, authoritarians and socialists ready to sacrifice the individual to an alleged collective welfare, but even so-called liberals have become oblivious of their own

fundamental principles. Whether doctrinaires like Guizot, opportunists like Thiers, democrats like de Tocqueville, scientific sociologists like Taine and Renan, economists like Bastiat and Say, none of them really believes in individual freedom; each claims it for himself but denies it to his opponents; the most ardent critic of state interference in economic or social relationships is the clamorous champion of oppressive state rights in the repression of "subversive" opinions, in the limitation of the freedom of groups and associations and in virtual autocracy in foreign policy. *La raison d'état* has killed any philosophy of natural rights.

Michel's chief concern was moral rather than strictly political—the defense of the individual conscience against all that might impinge upon its freedom of action. In this championship of the sacred rights of conscience Michel was largely influenced by the philosophy of Renouvier, who was to him the only logical liberal that France had produced in the nineteenth century—logical, that is, in his defense both of individual moral freedom and of the individual's right to protection by society against all obstacles to this free development. Of these obstacles pauperism was the chief, and Michel followed his master in placing an "advanced" program of social legislation in the forefront of his liberalism, thus doing more than anyone in his day, says Bouglé, "to bring together individualistic and socialistic tendencies."

ROGER SOLTAU

Important works: "La philosophie politique de Spencer" in Académie des Sciences Morales et Politiques, *Séances et travaux . . . Compte rendu*, vol. cxxxviii (1892) 215–54; *L'idée de l'état, essai critique sur l'histoire des théories sociales et politiques en France depuis la Révolution* (Paris 1895, 3rd ed. 1898); *La doctrine politique de la démocratie* (Paris 1901); "Herbert Spencer et Charles Renouvier" in *Année psychologique*, vol. x (1904) 142–60; *La loi Falloux* (posthumous essay, completed and ed. by S. Charléty (Paris 1906).

Consult: Bouglé, C., "Une doctrine idéaliste de la démocratie: l'oeuvre d'Henry Michel" in *Revue politique et parlementaire*, vol. xliii (1905) 562–76; Ruggiero, Guido de, *Storia del liberalismo europeo* (Bari 1925), tr. by Henry Collingwood (London 1927); Soltau, R. H., *French Political Thought in the Nineteenth Century* (London 1931).

MICHEL, LOUISE (*c.* 1833–1905), French revolutionist. Louise Michel played an extraordinary role in the development of the revolutionary movement in France, not as theoretician or organizer but as agitator. Her ability to inspire the masses with her own glowing enthusiasm and certainty secured her an immense popularity among the French workers. The paradox of her humanitarianism and the savagery of her attacks upon the ruling classes is perhaps explained by the influence on her character of the eighteenth century liberalism of her grandfather and the profound and permanent sense of pity aroused in her by the poverty of the peasants among whom she spent her childhood.

Louise Michel's active revolutionary career began during the siege of Paris in 1870. It was preceded by her refusal to take the oath of allegiance to Napoleon III, which resulted in her being denied a state post as teacher. During the Commune she organized clubs, nursing corps and the Union des Femmes and finally fought in the ranks of the National Guard on the barricades in the last days of May, 1871. After eight years of exile in New Caledonia she returned to Paris and resumed her agitation with undiminished fervor. She was active in Paris, London and Belgium, organizing women's groups, raising relief funds, establishing refuges for the politically persecuted and striving always to arouse the masses to revolutionary activity.

The political philosophy of Louise Michel was a blend of Marxism and anarchism. She believed in the inevitability of social revolution, the reality of the class struggle and the necessity of revolutionary action by the masses. The experience of the Commune led her to conclude that the revolution must first and foremost abolish the state. This and antiparliamentarism were the only anarchist doctrines she accepted. She had the greatest contempt for the individualistic elements in anarchist philosophy and had no respect for utopian colonization schemes or the problems of free love. But it was her day to day work as much as her theory that aroused the devotion of the masses, whose misery and poverty constituted her special problem. She participated in the actual struggles of the workers. Years spent in prison, poverty and deprivation could not dampen her ardor. Her supreme unselfishness won for her the respect even of the government which persecuted her.

Louise Michel was not a great leader. She left no theoretical heritage or definite program, only the example of her life—complete and fearless devotion to an ideal.

SARA SMALL

Important works: *Mémoires* (Paris 1886); *Légendes et chants de gestes canaques* (Paris 1885); *La Commune* (Paris 1898, 2nd ed. 1898).

Consult: Boyer, Irma, *"La vierge rouge," Louise Michel*

(Paris 1927); Lissagaray, P. O., *Histoire de la Commune de 1871* (Brussels 1876), tr. by E. M. Aveling (London 1886) p. 435–36; Malon, Benoît, *La troisième défaite du prolétariat français* (Neuchâtel 1871) p. 273–81; Rochefort-Luçay, V. H. de, *Les aventures de ma vie*, 5 vols. (Paris 1896), English translation by the author and E. W. Smith, 2 vols. (London 1896) vol. ii, p. 48, 74–76; Stead, W. T., "Louise Michel, Priestess of Pity and Vengeance" in *Review of Reviews*, vol. vi (1892) 155–67.

MICHELET, JULES (1798–1874), French historian. After a long childhood struggle against poverty and misery Michelet in 1822 became a professor at the Collège Sainte-Barbe in Paris. Five years later, following the publication of his first work, *Précis de l'histoire moderne* (1827; tr. as *Modern History*, New York 1855), he was appointed to the faculty of the École Normale, where during the next decade he exerted a deep influence on a small group of select students. After 1831 he served also as director of the historical section of the Archives Nationales and was thus able to familiarize himself at first hand with a vast collection of historical documents; from 1833 to 1836 he occasionally conducted Guizot's courses at the Sorbonne. His appointment in 1838 to the chair of history and morals at the Collège de France extended still further the scope of his influence, and in the closing days of the July Monarchy his lectures were a powerful factor in stimulating enthusiasm for the insurgent democratic movement which culminated in the Revolution of 1848. With the overthrow of the Second Republic in 1852 he was dismissed both from the college and from his post at the archives, remaining until his death an unrepentant democrat.

Throughout his life Michelet was unwavering in his loyalty and devotion to the masses from which he had sprung. Emotional and temperamental, with none of the staid, doctrinaire quality of a Guizot, he dedicated the exalted eloquence and richness of his style to resurrecting the unsung millions whose labors and heroisms constituted in his eyes the true epic of France. Deeply versed in Herder and Grimm as well as in Vico, whose *Principi di una scienza nuova* he had translated and helped to popularize in France, he believed above all in the creative power of the collective people and in the myths and legends which gave expression to their hopes and aspirations. His admiration for the dynamic role of the individual leader tended, especially in such works as the *Origines du droit français* (1837), *Le peuple* (1846; tr. by C. Cocks, 3rd ed. London 1846), *La sorcière* (1862; tr. by L. J. Trotter, London 1863) and *Le bible de l'humanité* (1864; tr. by V. Calfa, New York 1877), to be overshadowed by his sense of the symbolic character of leadership, which he conceived as merely embodying the mass ideals of the people. Even a cataclysmic historical movement like the French Revolution derived its primary significance in his eyes from the fact that it symbolized the creative genius of the masses of obscure Frenchmen, in whose struggles was mirrored the very spirit of France. In the seven volumes of his monumental survey of French history which deal with the French Revolution, and which constitute Michelet's most significant historical work, the note of intense nationalism characterizing all of his writing is tinged with a partisan bias that reflects many of the prejudices engendered during the period of the 1848 Revolution.

The appeal of Michelet's lyrical style and his impetuous glorification of France have continued to inspire in countless of his fellow countrymen a love of the national past. Later generations of French historical scholars, conscious of this enduring appeal, have been on the whole tolerant of his lapses from orthodox historiography and have been inclined to emphasize instead his positive contributions to historical studies, such as his use of documents, his service in counteracting Thierry's rigid thesis of racial determinism, his recognition of the geographical factor in history and his unrivaled power of revitalizing the past. His reputation outside France, being confined almost entirely to academic circles, has tended to suffer with the general progress of research technique and facilities. But despite widespread skepticism regarding the conclusions of the romantic historians in general and the not infrequent tendency to dismiss Michelet as an erratic, often superficial and prejudiced, enthusiast large sections of his work are still prized even by exacting scholars as preeminent examples of the art of historical writing.

LUCIEN FEBVRE

Works: *Histoire de France*, 17 vols. (Paris 1833–67), vols. i–ii tr. by W. K. Kelly (London 1844–46); *Histoire de la Révolution française*, 7 vols. (Paris 1847–53); *Histoire du XIXe siècle*, 3 vols. (Paris 1872–75); *Oeuvres complètes*, 40 vols. (definitive ed. Paris 1893–98).

Consult: Monod, G. J. J., *La vie et la pensée de Jules Michelet*, 2 vols. (Paris 1923), and *Jules Michelet, Étude sur sa vie et ses oeuvres, avec des fragments inédits* (Paris 1905); Lanson, G., "Le tableau de la France de Michelet, notes sur le texte de 1833" in

Wilmotte, M., *Mélanges de philologie romane et d'histoire littéraire*, 2 vols. (Paris 1910) vol. i, p. 267–99; Rudler, G., *Michelet historien de Jeanne d'Arc*, 2 vols. (Paris 1925–26); Refort, L., *L'art de Michelet dans son oeuvre historique* (Paris 1923); Chabaud, A., *Jules Michelet* (Paris 1929), with bibliography p. 57–84; Gooch, G. P., *History and Historians in the Nineteenth Century* (2nd ed. London 1913) p. 175–85; Fueter, E., *Geschichte der neueren Historiographie*, Handbuch der mittelalterlichen und neueren Geschichte, vol. i (2nd ed. Munich 1925) p. 452–55.

MICKIEWICZ, ADAM (1798–1855), Polish national poet. Mickiewicz had completed his studies at the University of Vilna when he was exiled to the interior of Russia because of his participation in student patriotic activities. He lived in Odessa, Moscow and St. Petersburg until 1829; in that year he went abroad, traveling in Germany and Italy. After the suppression of the insurrection of 1831 he joined the Polish political émigrés in Paris. For a brief period he lectured on Latin literature at the Lausanne Academy, and upon his return to Paris became professor of Slavic literature at the Collège de France. He came into close contact with Lamennais, Michelet and other French thinkers, who influenced his thought and whom he in turn influenced. It was in Paris also that he came under the spell of Towiański, the Polish mystic who believed himself chosen by God to restore the principles of true Christianity. His temporary association with Towiański not only involved Mickiewicz in difficulties with the Catholic church but was largely responsible for his dismissal from his academic post in 1844. During the Austro-Italian war of 1848 he organized a Polish legion. Subsequently he returned to Paris as the editor of the *Tribune des peuples*, a publication devoted to a defense of the rights of oppressed nations, and advocating radical social reform. In 1855 during the Crimean War he set out to join the Polish formations organized in Turkey to fight against Russia, but died in Constantinople before he could take an active part in the conflict.

The span of Mickiewicz' activity coincided with that period when the current of rationalism, which had led to a revival of Polish literature in the second half of the eighteenth century, had become void of both ideas and talent. As the creator of Polish romanticism he broke with the dogmas of classical aesthetics and in his works became the champion of individualism, of the creative freedom of genius, of reverence for folklore and for the Middle Ages. With the publication of *Konrad Wallenrod* (St. Petersburg 1828; tr. by G. R. Noyes, D. P. Radin and others in *Konrad Wallenrod and Other Writings*, Berkeley 1925) Mickiewicz achieved lasting fame as Poland's greatest national poet; this poetic tale, which deals with the struggle of the Lithuanians with the Teutonic Knights in the fourteenth century, presents in its hero the most sublime example of love for one's country and its tragic conflicts with the demands of heart and conscience. Shaken by the national calamity—the failure of the insurrection of 1831—Mickiewicz wrote his two finest poetic works: *Dziadów, część trzecia* (Dresden 1832; tr. by D. P. Radin and ed. by G. R. Noyes as *Forefathers' Eve, Part III*, London 1925) and *Pan Tadeusz* (2 vols., Paris 1834; tr. by G. R. Noyes as *Master Thaddeus*, 1 vol., London 1917). In the former he portrayed the persecution by the Russian government of the young generation struggling for the freedom of Poland and prophesied the future liberation and greatness of his fatherland; the hero, Konrad, acutely aware of the sufferings of his people and overcome by the power of Evil Triumphant, seeks a means of rescue at first in a revolt against God—this great improvised scene constitutes the supreme flowering of Polish poetry—and later through reconciliation and Christian humility. *Pan Tadeusz* describes at length the life and customs of the minor Polish nobility in Lithuania against the background of the opening events of the great war of 1812; written with noble simplicity of style, combining elements of lofty tragedy and subtle humor and portraying the moment of transition between two epochs, it has become the national epic of old Poland.

But Mickiewicz was more than a poet. He was the personification of the Polish national spirit inflexible in captivity, the champion of the liberty of all oppressed nations. In his *Ksiegi narodu polskiego i pielgrzymstwa polskiego* (Paris 1832; tr. as "Book of the Polish Nation and Polish Pilgrims" in *Konrad Wallenrod and Other Writings*, Berkeley 1925) he developed the idea of Polish messianism; God has entrusted to the Polish people the task of initiating a new era of liberty and justice. The redemption of man from spiritual degradation by the act of Christ is to be paralleled by the liberation of oppressed peoples by the self-sacrificing struggle of the Poles. Mickiewicz saw in the sufferings of the Polish people the divinely ordained process of spiritual purification preparatory to the realization of its mission, and looked upon the dispersion of Poland's bravest sons over the civilized

world as a part of the divine plan of spreading the gospel of political and social liberation. This spiritual manifesto, which served as a source of consolation and inspiration to the oppressed Polish people, won the sympathies of contemporary radical and religious thought. It was received with particular enthusiasm in France and contributed greatly to the strengthening of the traditional cultural friendship between the two nations. As a Slavophile, Mickiewicz sympathized with the Russian people, but he believed that czarist absolutism constituted an obstacle to the union of the Slavic nations.

STANISŁAW PIGOŃ

Works: *Pisma Adama Mickiewicza* (Writings), ed. by J. Kallenbach, 7 vols. (Brody 1911–13); *L'homme eternal: pages choisies en prose* (Paris 1929). For a complete list of his works see Korbut, Gabriel, *Literatura polska od początków do wojny światowej* (Polish literature from its beginnings up to the World War), 4 vols. (Warsaw 1929–31) vol. iii, p. 14–37.

Consult: Gardner, Monica M., *Adam Mickiewicz, the National Poet of Poland* (London 1911); Dyboski, Roman, *Periods of Polish Literary History* (London 1923) p. 85–100; Krzyżanowski, Juljan, *Polish Romantic Literature* (London 1930) p. 41–105; Articles by Józef Kallenbach and others in *Monde Slave*, n.s., vol. vi (1929) 321–496; Kallenbach, J., *Adam Mickiewicz* (in Polish), 2 vols. (4th ed. Lwów 1926); Szpotański, S., *Adam Mickiewicz i jego epoka* (Mickiewicz and his epoch), 3 vols. (Warsaw 1921–22), and *Adam Mickiewicz et le romantisme* (Paris 1923); Pigoń, Stanisław, *Z epoki Mickiewicza* (Mickiewicz' epoch) (Lwów 1922); Chmielowski, Piotr, *Filozoficzne poglądy Mickiewicza* (Philosophical views) (Warsaw 1899). For an extensive bibliography of works about Mickiewicz see Stolarzewicz, Ludwik, *Bibliografia mickiewiczowska* (Vilna 1924).

MIDDLE CLASS. The middle class, whether viewed historically or as a present day phenomenon, cannot be considered a homogeneous social layer. The break up of the feudal economy, characterized by a growing division of labor as between the producer of raw materials and the small manufacturer and by the concentration of commercial and industrial enterprise in the towns, brought into existence a somewhat cohesive intermediate social and functional group (*Mittelstand*). This initial cohesiveness was intensified by the growth of a civic spirit, which gradually transformed the inhabitants of the towns into self-conscious burghers more or less united in their determination to secure legal privileges and rights and to bring to an end, forcibly if necessary, the restrictions imposed by the feudal landowners. The transition from the mediaeval to the modern economy, which took place first in Italy and later throughout the rest of Europe, was the work in large part of this commercial and industrial *bourgeoisie* of the towns, which continued throughout the period of early capitalism to occupy an intermediate status between the older privileged estates on the one hand and on the other the serfs and peasants riveted to the land. The gradual transformation of this early "intermediate estate" (*Mittelstand*) into a "middle class," comprising a mixture of more or less heterogeneous and often conflicting economic and social elements, is a reflection not only of the decline of the older privileged estates but also of the tendency toward increasing complexity of social structure manifested in the successive stages of the unfolding of the capitalistic system. The transition from mercantilism to industrial liberalism to monopolistic neomercantilism is accompanied at each step by new alignments and new tensions within the intermediate economic groups. At the same time the gradual displacement of the concept of status by the concept of class and the schematic formulations of the proletarian ideologists have thrown emphasis on new cleavages inherent in the modes of production characterizing fully developed capitalism. The modern bourgeoisie, although stemming ultimately from the burghers of the late mediaeval towns and although constituting during most of the intervening period a middle class in the literal sense of the term, is interpreted in the light of Marxian socialist theory as a privileged upper minority feeding on surplus value and state favoritism and inexorably driving its victims into the ranks of the proletariat. This dualistic interpretation when set against the realities of contemporary economic life would seem to minimize the multiplicity of intermediate groupings which lie between the trust bourgeoisie and the proletariat, and which may be grouped together with some show of precision as the "middle class." Conceived thus the middle class includes within its ranks the middling size entrepreneur in industry and trade; the simple producer of goods, such as the artisan and farmer; the small shopkeeper and tradesman; and the official and salaried employee.

The difficulty of delimiting the middle class with any pretension to final precision is illustrated particularly in the case of the small industrial and commercial entrepreneur, whose business is conducted on a limited scale and as a rule under his more or less immediate supervision. For like the bourgeois monopolist such an entrepreneur conceives value in terms of

market exchange, is impelled exclusively by the profit motive and is an employer of labor. Moreover it should be emphasized that the attempt to distinguish between the upper and middle class entrepreneur by recourse to numerical criteria, as, for example, the number of workers employed, is an unrealistic if inescapable analytical device.

In the transition from the monopolistic and absolutistic regime of mercantilism to the period of laissez faire enterprise ushered in by the American and French revolutions, the small scale entrepreneur played a decisive role. The revolutionary successes of the late eighteenth and mid-nineteenth centuries signified not only the destruction of the *ancien régime*, along with its various types of feudal, clerical and monarchical restrictions, but also a reorientation of the position of the middle class itself. For the upper ranks of the bourgeoisie—merchant proprietors, financiers, slave traders, colonial entrepreneurs, tax farmers, munition makers and manufacturers of luxuries—which during the early stage of commercial capitalism had acquired privileges and wealth under a mercantilistic regime, were likewise set upon by the champions of the hitherto neglected industrialist proper. The ideology of the *philosophes* and the enthusiastic libertarianism of the *beaux esprits* thus acquired a weighty economic ballast in the realistic demands of the industrial entrepreneurs. Unideological from the outset and rejecting theoretical abstractions, the manufacturers and factory owners with a close eye to their workaday interests mapped out a clear cut if not farsighted economic, political and social scheme of values. In their desire for freedom of trade in its broadest sense they battered down not only the relics of the mediaeval guild restrictions but also the privileges, monopolies, subventions, price regulations and other restrictions on enterprise bequeathed by the autocratic state. The program of free trade called likewise for the abolition of feudal conventions of land tenure, which by artificially restricting the consumption capacity of the most numerous element in the population, prevented any real expansion of the market for industrial products. Moreover the policy of binding the agrarian classes to the soil seriously restricted the supply of proletarian labor and to that extent retarded industrialization.

The financial program of the radical entrepreneur called for economical and commercially sound legislation and administration and more particularly the abolition of prevailing abuses in public finance, such as the discouragement of capital accumulation by extortionate taxation, unrestrained loan economy, the wasting of state revenue on court luxury and the upkeep, whether by sinecures or outright contributions, of a bankrupt nobility. The primary prerequisite of such a financial program was a national constitution which by insuring the ascendancy of the propertied and cultivated middle class in the management of public affairs would prevent discrimination from above and at the same time guard against the instability of the masses from below. Satisfied with a limited franchise and a regulated monarchy, the typical entrepreneur was concerned primarily with limiting the economic role of the state to the protection of life and property.

This jealous attitude toward the state was first clearly manifested in the struggles between the different economic and social groups engaged in the revolutionary movement in France. To the manufacturer, the merchant and the tradesman, individualistic and anti-authoritarian to the core, the mass minded Jacobin dictator with his omnipotent state, his Draconian taxes and forced loans, his enthusiasm for the subjection of the individual to the *volonté générale*, was a false prophet to be silenced as quickly as possible. The deeply rooted anti-authoritarianism of the middle class entrepreneur is instanced most clearly in mid-nineteenth century England. In the eyes of the English industrialist and trader the state, which since the Reform Act of 1832 had become to a certain extent his agent, could offer nothing better than stability and free opportunity for industrial expansion; more positive economic participation was not only superfluous but detrimental. Unswerving adherence to the principles of profit and free competition is mirrored in the statistics of steadily rising production, improvements in communication and expanding commerce. But the significance of these accomplishments did not remain limited to the economic sphere. Under the domination of the middle class the entire range of social and intellectual life was brought into the orbit of the capitalistic price system; science, literature, art, were forced to justify themselves in terms of prevailing economic values and principles.

Although the middle class entrepreneur had succeeded in overturning absolutism, clericalism and feudalism; although, viewed in a broader historical perspective, he had brought to a successful termination the earlier struggle of the burghers of the late mediaeval towns against the

feudal lords; and although he had created throughout Europe and in outlying colonial areas a world in his own image, he soon found his position undermined and was forced to witness the decay of the economic and social principles which he had propagated and institutionalized. Proudhon's paradox, "Competition kills competition," might well serve as an epitaph of middle class liberal capitalism. The cut-throat struggle of medium sized and small scale entrepreneurs resulted in wholesale elimination of the less fit and thus prepared the way for monopolization, the dominant characteristic of latter day capitalism. This tendency first took root in the branches of industry in which a really free competition had never existed or had constituted a relatively short phase of development. But the monopolization of the basic industries, of means of communication, of banks and the like resulted in a wave of attempts at concentration and monopolization which engulfed the entire national economy, even the manufacturers of finished products. The extraordinary demand for capital resulting from the variety of mammoth enterprises drew together the banker and the industrial capitalist and ushered in that economic system which since Rudolf Hilferding's classical discussion has been alluded to as finance capitalism (*Finanzkapital*).

During the same period the familiar process of amalgamation between the landed aristocracy and the more powerful industrial and financial magnates was intensified. The development of more absorbent urban markets for raw materials and provisions, the building up of the trades auxiliary to agriculture, which were from the first capitalistically managed, the possibility of investing the income from land in industrial and commercial securities, accelerated the transformation of the feudal aristocracy into agrarian capitalists. On the other hand, the plutocracy invested itself more and more diligently with the trappings of aristocracy, through marriage, social contacts, acquisition of landed estates and cultural refinements in general. The foundations for the alliance between what Brinkmann terms the "primary" and "secondary" aristocracy are ultimately laid in foreign and economic policy; for the rise of monopoly capitalism signifies even in these spheres a complete departure from liberal capitalism. The policy of free trade or the protection of infant industries was replaced by an aggressive policy of prohibitive tariffs; antimilitarism by the race for armaments; the renunciation of colonial expansion by armed struggle for the control of raw materials and above all of spheres for the investment of capital. But this very overthrow of liberal middle class anti-authoritarianism by the trust bourgeoisie minority, this neomercantilist establishment of the trust directed state in the competitive struggle for a place in the sun, opened to members of the nobility as officers, diplomats and administrative officials a variety of well paid, eminently respectable careers.

To the up to date industrial magnate the enthusiasm of the liberal middle class progressive for free play of economic powers, for manly pride as above princely thrones and the like began to seem at best unrealistic. For he had come to understand that as a whole this ideology from the heroic age of the bourgeois middle class was no longer applicable to the relationships of dependence inherent in monopoly capitalism. At times he even finds it difficult to disguise his sympathies for a hierarchical ordering: for a new corporative state, in which the industrial bourgeoisie and their agrarian and financial capitalistic adherents would take over the role of the nobility and the proletariat that of the peasantry.

The transformation of the liberal capitalism of free competition into trust ridden imperialism and the more profound dislocations involved therein placed the small and middling entrepreneur on the defensive, just as the business houses, the manufactories and factories had done in the case of the master craftsman at an earlier period. To their economic dispossession the artisans had replied with the demand for the reestablishment of guild restrictions; to the threats of the trust bourgeoisie the small capitalists responded with the mellow rhetoric of liberalism. Most interesting in this connection is the American antitrust legislation. The United States began its political career as a democracy of small farmers and traders. Its economic development, omitting the earlier stages characterizing European development, began directly with competitive capitalism. On this account the process of monopolization, which set in at an early date and with great force, could not build upon native prototypes of early capitalistic provenance and encountered the strong opposition of public opinion, which had erected free competition into an economic dogma. Because the structure of American society thus offers a unique chance for an attack by the middle class against monopoly capital, an unusual significance may be attached to the practical failure

of the antitrust legislation. This failure is to be accounted for not only by the obvious legal difficulties of trust supervision or by the impossibility of checking an economic development once it has set in but, more important, by the impracticability of divorcing a recognized principle from the consequences to which it necessarily leads. On this account the small entrepreneurs, who while they desired free competition did not desire the competition to turn into monopolistic forms, fought on the whole a hopeless battle.

The growing dependence of the middle class entrepreneur on the large concerns, the banks and the basic industries has tended to sap his opposition to the trust bourgeoisie. Since the monopolization process has encroached upon the manufacture of finished products, the hope of the smaller industrial and commercial capitalist has come to lie less in the struggle against monopoly than in the attempt to transform himself into a monopolist. The relationship between the capitalistic middle class elements and the trust bourgeoisie is complicated by the fact that the upper minority, thanks to its wealth, the closeness of its organization, its control over the institutions with whose help public opinion is formed, functions at least nominally as the champion of the entire capitalist class against the working class and the labor movement.

The paradoxical position of the smaller entrepreneur in modern society with his vacillation between opposition and surrender to the trust bourgeoisie is clearly mirrored in his social ideals, pieced together with pious hands from the remnants of faded bourgeois liberalism. It would be incorrect, however, to consider the trust bourgeoisie as imperialistic, neofeudalistic and sympathetic with the corporative state, and the capitalistic middle class as "liberal." For the trust bourgeoisie also can occasionally become enthusiastic on behalf of the free play of economic powers and the non-participation of the state in economic life; namely, when the workers with the help of their political and economic organizations desire to improve their conditions of work or to put through social protective legislation. Similarly the struggle against genuine collectivist tendencies, such as those aiming at the socialization of means of production, is enthusiastically supported by the trust bourgeoisie and its agents by recourse to old liberal arguments, in which a free competitive capitalism, in reality no longer in existence, is contrasted with a bureaucratic, torpid, so-called socialistic national economy—of course to the disadvantage of the latter. Thus from the point of view of the salvaging of liberal ideology there exists no essential difference but merely one of degree between monopoly capital and its hangers on among the smaller entrepreneurs. While the "liberalism" of the trust bourgeoisie is directed invariably downward against the political and social demands of the laboring classes, the capitalistic middle class liberalism assumes at times the form of a gentle opposition directed upward against monopoly capital.

On the other hand, sympathy with the neofeudalistic program of a corporative state is in certain countries, notably Germany, widespread throughout the small entrepreneur group. While the support of this program on the part of the monopolist has as its intention the unequivocal avowal of a hierarchical order, which although it is an unmistakable symptom of capitalism must be disguised out of deference to democratic pretensions, the enthusiasm of the capitalistic middle class for the corporative state stems from the hope of occupying in such an order an assured middle position—assured on the one hand against oppression by the large concerns and on the other against the claims of the working classes.

With these middle class aspirations the smaller industrial and commercial capitalist approaches the second large section constituting the middle class, the artisans, the small shopkeepers and tradesmen, the peasants and the "petty bourgeoisie" in general. The present day attitude of the artisan is determined to a large extent by his historical background. As a group the artisans have consistently held fast to their precapitalistic guild tradition even in the heyday of competitive capitalism, when their position was aggressively reactionary. In contrast with the modern capitalist the genuine artisan of any period is interested in use value rather than exchange value and is motivated less by the profit incentive than by an impulse to satisfy consumption needs. Through the sale of the products made in his workshop he seeks to earn as much as is necessary to maintain an existence appropriate to his status. A skilled technician rather than a trader, he has mastery over a specific production process thanks to his possession of the guild secret. In the mediaeval economy the assistants of the master craftsman, the apprentices and journeymen employed by him, differed from him in age and experience but not in social position. At a comparatively

early stage of capitalism, however, the patriarchal organization of masters, journeymen and apprentices was replaced by the system of domestic manufacture, under which the entrepreneur is no longer the actual producer and the actual producer no longer in control. In the transition from the small domestic factory to the large scale mechanized plant the independent status of the handicrafts was still further threatened.

Against this increasingly serious threat the artisan raised the demand for the reestablishment of the guild constitution. In this he was supported by monarchical, noble and clerical groups, who rallied around the banner of counter-revolution and restoration and thus sought political alliances with the artisans threatened by liberalism. These efforts were not entirely fruitless; they were crystallized in the German and Austrian *Mittelstand* legislation aiming at the protection of the lower middle class engaged in the smaller trades and handicrafts. In the Anglo-Saxon countries, much more deeply influenced by liberalism, analogous legislation was entirely lacking; in England virtual free trade had existed since the Revolution of 1688, while the United States never knew a handicraft system in the sense of the mediaeval European trade organization.

The *Mittelstand* legislation of the late nineteenth century, seeking to promote cooperative self-help in the various fields of economic activity, preserved the handicrafts and small trades from total submergence. While it is true that the development of monopoly capitalism tended to stifle handicraft along with other individualistic enterprises, it nevertheless opened a few doors here and there and gave it a new lease on life. The artisan as well as the small trader has come to be at the beck and call of the large capitalist, disposing of, installing, distributing and repairing the goods produced in the great factory industries. In spite of the rapid disappearance of his independent economic functions and responsibilities the lower middle class tradesman and shopkeeper clings all the more ardently to the semblance of independence. On occasion he may indulge in heated outbursts against the financier and monopolist, but the sting is drawn by his deep seated fear of radical proletarianism. With the dwindling of his possessions the horror of expropriation increases. His plight is made worse by his inability to resist the wage policy demands of organized labor, to shift the cost of wage increases on to prices or to replace the increasingly expensive human labor power by greater use of machines. Moreover the comparison of his standard of life with that of the skilled, relatively well paid, unionized worker protected by social policy adds to his general feeling of resentment, which usually winds up by regarding the monopolist as the lesser of two evils. Thus the powerful capitalist can count on a fairly strong numerical following and feels safer in pushing ahead with his program of tacit expropriation by means of taxes, customs duties, interest, monopoly prices, while giving eloquent assurance of his assistance in the event of threatened expropriation by radical violence.

As members of the old middle class it is customary to include, along with the urban shopkeepers and tradesmen and artisans, the peasants. This is correct in that both peasants and artisans were constituent parts of a precapitalistic economy; but it is incorrect in that in countries with the feudal system the peasants did not form a part of the middle class but the lowest stratum, the base of the social pyramid. The same process of bourgeois emancipation which lowered the level of existence of the simple producers of goods in the cities raised that of the rural producers. In no country in which the peasants were able to emancipate themselves in the train of the urban bourgeoisie were they repressed during the course of the nineteenth century as was handicraft by the competition of the factory. Where the small agricultural producers were to a certain extent deprived of their land, as in England at the time of the wars with revolutionary and Napoleonic France or in Prussia in connection with the liberation of the peasants, this was the result not of the economic superiority of large scale industry but of definite political events.

The coincidence of bourgeois revolution and violent liberation of the peasants gave an enormous impetus to the French revolutionary movement and at the same time a great stability to the social order which followed the revolution. The fact that France, which experienced four revolutions in a century, is today the outstanding example of middle class conservatism is attributable in no small part to the enormous proportion of middle class rural elements. When in Germany in the last third of the nineteenth century the advance of large estates at the expense of small holdings came to a standstill and the specialization of production set in between large scale and small scale enterprise, the oppo-

sition of *Junker* and peasants, proverbial in the precapitalistic era, lost the last remnant of its actuality. The transformation of Germany from an agrarian exporting into an importing country led to the rise of an agrarian protective tariff policy uniting *Junker* and farmers. In organizations like the League of Agriculturists (*Bund der Landwirte*), founded in 1894, the peasants subordinated themselves to the leadership of the politically influential, landed aristocracy. The alliance between "primary" and "secondary" aristocracy was thus cemented and increased, so that, at least until the increasingly severe dislocations of the present crisis began to make themselves felt in rural areas, the agrarian capitalists added the peasants to the political following of the trust bourgeoisie.

The third large group to be considered as an element in the make up of the middle class is composed of bureaucratic officials and private employees working on a salary—the group known in Germany as the *neuer Mittelstand*. Although in a strictly economic sense both officials and salaried employees are essentially proletarians inasmuch as they are dependent upon the sale of their labor power, the realities involved in the relationship invalidate such an abstraction. The relationship between the public official and the state is first of all built on the premise of a higher loyalty; moreover the interminability of his post, the right to a pension and the adequacy of his salary tend to identify him much more with the professional groups. The activities of the official—except in the case of industries run by state capital—produce neither value nor surplus value; moreover both as a functionary in an elaborate bureaucratic system and as a recipient of derived income he is out of touch with the everyday realities and tensions of social conflict. For this reason he is disposed to gloss over the realistic economic implications of the class struggle with vague ethical and emotional sentiments and therefore to accept at face value the assurances of the trust bourgeoisie that the class struggle is a figment of distorted imaginations. The promonopoly attitudes thus generated among the ranks of state officials are of course strengthened by the ordinary relationships involved in plutocratic pressure on state government.

The average commercial or technical employee differs from the real proletarian not only as regards his social background, which is usually lower middle class, but also by his educational training, which has sometimes extended even to a university. Another differentiation is to be found in the function which he performs in the production process. The great increase in the number of salaried employees under a system of large scale industry is attributable in large part to the fact that in the course of capitalist evolution many responsibilities borne by the individual entrepreneur were delegated to hired assistants. Under the early system of commercial capitalism the salaried employee stood in a confidential relation to his employer and tended to consider his work merely as an avenue to an independent career. But even with the closing of this avenue the salaried employee continued to be distinguished from the proletarian by the form of his contract of work—a monthly salary instead of hour or job rates—by the relative security of his employment and by the expectation of ample care for his old age. Accordingly the older German employee movement (*Angestelltenbewegung*) explicitly emphasized the distance between the employee and the proletarian and his identity of interests with the entrepreneur. A by-product of capitalism, the salaried employee is more modern in outlook than the artisans or farmers, who are burdened with the vestiges of the precapitalistic era. But the group as a whole is little swayed by impulsive social ideals, being much more intrigued by the magnificent pageant of imperialism. The phenomenal development of consumption markets at home and abroad, the resulting expansion of production and proliferation of distributive agencies, have lured the employee with the prospect of continued advancement in his particular line. Moreover in the emotionally tinged rhetoric of national defense and colonial expansion as well as in the anti-equalitarian premises of aristocratic and Fascist social theory he finds a vicarious emotional outlet.

The world wide economic crisis has deeply involved the "new middle class" in the general suffering. The catastrophic decline of national income and the inevitable paring of expenses have resulted in frequent cuts in salary, irregular payments, the barring of promotions, the cutting down of staffs, premature pensions and compulsory retirements. Moreover the transformation of the economic into a political crisis further affects the former security of the professional official class through the possibility of dismissal on political grounds.

Conditions are no more favorable for the salaried employee. Even in the period before the crisis the spread of bureaucratic corporations

on the one hand and the rapid growth in the number of salaried employees on the other rendered obsolete the idea of a personal confidential relationship between employee and employer. At the same time it became evident that the group of salaried employees was no longer safe from the threat of technological unemployment. The reserve supply of salaried employees, which was coming into existence even before the crisis, has assumed staggering proportions. In Germany there are at present about 600,000 salaried employees out of work; that is, as many as there were unemployed workers in the most adverse pre-war years. But this large army of reserves signifies an additional source of further unemployment. For the entrepreneur no longer keeps a string on his employees as he formerly did but merely unloads them with no fear that thereby the routine of business in the future period of revival will be injured; the reserve army contains employees of every category and every quality.

The existence and growth of the reserve army is an obvious strain on those still employed. In Germany there is being waged at the present time a struggle between employers' and employees' organizations over the adoption of the so-called short labor clause in wage contracts. If the employees are forced to give in, one of the last distinctions between the salaried employee and the proletarian will have disappeared. However much it may clash with his own picture of himself, the employee with a short labor contract, who no longer receives a definite salary for a definite time but is paid according to the actual number of working hours, is on the whole as much a wageworker as the proletarian proper.

On the outskirts of the new middle class are to be found the members of the so-called free professions. This group is also strongly differentiated within itself. In its higher levels, composed of prosperous doctors and lawyers and popular artists, it tends by reason of its financial and social prestige to identify itself with the upper strata of society. The role of the successful artist under the present economic and social system is epitomized in the motion picture star. Like other successful artists he or more frequently she dramatizes for the popular imagination the alluring myth of the progress from rags to riches. Carried away by the romance of the star's own meteoric career no less than by the unfailing good fortunes of the shadows delineated, millions of "fans" find escape from the realities of their own existence and from the foreboding prospects of struggling in the company of their equals for the reformation of society.

Somewhere below this upper crust of professionals loom the doctors without patients, the lawyers without clients and the writers without readers. Even before the World War in the countries in which the educational system was still undemocratic there existed a group known somewhat vaguely as the "intellectual proletariat." An intellectual proletarian may be defined as the recipient of higher educational training who in his later life finds no opening in which to carry on the kind of practise for which he is trained. The apparent advantages of a self-sufficient professional career over a restricting office job have sent an ever increasing number of graduates from the higher centers of learning into the professions. The increased enrolment in the universities and professional schools, accompanied by a sharp drop in the demand for the services of academic graduates, has materially augmented the ranks of lawyers and doctors scraping along on scanty incomes. The gulf between youthful expectations and the disheartening realities of later life has tended to produce in the case of many professional men an intellectual and emotional lesion, in which the natural sense of frustration and rebellion clashes with the remnants of pretensions and ideals implanted in the impressionable years of academic training. The consciousness of frustration and the general sense of insecurity tend to eventuate at the best in an attitude of intellectual skepticism and relativism and oftentimes in emotional tensions and complexes. While the dispirited lawyer or journalist or artist is seldom averse to airing his impatience with the common run of the middle class he shows little inclination to sacrifice his deeply ingrained sense of personal integrity and self-sufficiency to the rigid discipline of socialist organization and tactics. If pressed for his positive social ideals he would subscribe to a diluted cooperationism or anarchism, provided that his own scheme of values was left untouched; or not infrequently he might disclaim any ideals. For his type of mind is not given to activist formulations and sustained programs; inclined to roam forward and backward in time it anticipates coming changes and in the light of secular perspective discounts them long before they have happened. In so far as such intellectualization eventuates in any formal point of view the tendency is toward vindication of

the status quo. For once it is conceded that any transformation of social organization is ultimately barren and efforts in that direction futile, revolutionary *élan* is paralyzed. Thus the highly educated professional group, while chafing against the dominance of middle class ideals, is a distinct factor in perpetuating them.

An analysis of the various strata which comprise the middle class must take into consideration the upper levels of the working class movement. The upward swing of capitalism brought into being especially in the more highly industrialized countries a labor élite which began, as its standard of living improved, to deck itself with middle class vestments. Skilled workers whose high salaries permitted of savings and a scale of living approximating the small shopkeeper and tradesman were seldom haunted by the threat of unemployment. Their children received a fairly good education and later, whether by entering a profession or through marriage, went over into the ranks of the petty bourgeoisie proper. The process of differentiation within the labor movement was intensified by the appearance of an essentially bureaucratic group composed of union and cooperative leaders separated from the process of production and dependent for the continued exercise of their authority on the perpetuation of the existing system. The assimilation of educated workers into the labor bureaucracy, the reception of labor bureaucrats into the national governmental and administrative system, the rise of labor functionaries to the highest positions in the state, have still further tended to convert labor organizations into pillars of the capitalistic system or, to use the metaphor of Tarnov, into "physicians" of capitalism.

The crisis in the capitalist system, which found its first clear expression in the period of the World War and the revolutions connected with it and which now continues, after the short period of apparent stabilization from 1924 to 1928, in the world wide economic depression and its social repercussions, has seriously weakened the labor élite even in powerful capitalist countries such as the United States and England, where the labor movement had reached a highly developed stage; while in the social tensions and realignments in a country like Germany the labor élite has virtually been wiped out—and with it an important ingredient of economic and political stability.

The present crisis aside from weakening the various middle class elements has also in a variety of increasingly perceptible ways undermined the hypothesis of an identity of interests between the monopolist-financier minority and the middle class capitalist groups. Evidences of a dilemma are manifesting themselves. To keep from being engulfed himself the large capitalist is exerting pressure on the small fry capitalist as well as on the proletarian. On the other hand, the upper minority as a group is aware of its insecurity the moment it becomes actually isolated, the moment it can no longer count upon a majority following in the ranks of the middle classes and the workers, the moment it no longer has at its disposal organizations with a mass basis which will either openly concur in capitalist premises or support it by an assumed opposition. Meanwhile the hard hit and restless middle class seeks new ways of its own, some compromise which is neither financial capitalism nor communism. The attempt of the middle class to formulate a coherent, workable system is handicapped at the outset by the fact that as a class it possesses the homogeneity neither of the trust bourgeoisie nor of the proletariat. It is a mixture of heterogeneous elements, some in undisguised conflict. The farmer desires a high protective tariff, but the artisan desires low commodity prices, while the industrialists and merchants export; the public official favors high salaries, the small shopkeeper and tradesman favor low taxes; as regards wage and social policy the salaried employees have the pronounced interests of those who are given work, but the small capitalists have the equally definite interests of those who give it. This tendency of the middle class to split up into a series of conflicting elements is illustrated most strikingly in the politics and tactics of German National Socialism. Relying for their strength on a broad middle class following the National Socialist leaders have built their rallying cries around unprecise concepts such as leadership, nationalism, antisemitism, antifeminism and the like, carefully skirting any concrete program or promises. In its somewhat unrealistic search for an economy which is neither capitalistic nor communistic the middle class has furnished, at least up to the present, the spectacle of a man who seeks escape from his oppressor but who while in flight is recaptured and returned to his former master. The middle class may well remain for some time to come in this state of oscillation between surrender and resistance to monopoly capital; but it is also possible that at least to certain middle class elements it will become apparent that

merely nominal opposition to financial capital is not essentially different from outright support and that the logic of the situation demands active cooperation with the workers. At any rate the choice between these alternatives will be, particularly in the countries with strongly intrenched middle class groupings, one of the major determinants of the social and economic patterns of the future.

ALFRED MEUSEL

See: BOURGEOISIE; CLASS; CLASS CONSCIOUSNESS; CLASS STRUGGLE; INTERESTS; REVOLUTION AND COUNTER-REVOLUTION; FRENCH REVOLUTION; LIBERALISM; LAISSEZ FAIRE; INDIVIDUALISM; TRUSTS; OCCUPATIONS; PROFESSIONS; BUREAUCRACY; RENTIER; MASSES; PROLETARIAT.

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MIDDLEMAN has been used as a generic term for any person who has intervened in the process of purchase and sale either between the primary producer and the manufacturer or the manufacturer and the final consumer. In the Middle Ages the middleman was customarily viewed as an interloper, an economic parasite who forced his way between producer and buyer in order to reap an unnecessary profit. In the conditions prevailing in western Europe during the fifteenth and sixteenth centuries there was probably considerable practical reason for such a view. The wholesale merchant was so often in the position of monopolist; he could so frequently take advantage of distance and imperfect information to create local "corners" in essential supplies; and the moneyed man was sufficiently a *rara avis* to be in a position to prey upon the urgent requirements of less moneyed buyers and sellers. At any rate, from this attitude was born that mass of legislation against "engrossing, forestalling and regrating" which characterized fifteenth and sixteenth century England. It was Petty who spoke of the large number of persons who "might be retrenched" since they "properly and originally earn nothing from the Publick, being only a kind of Gamesters"; while Locke declared that middlemen retarded the circulation of money. At the same time Petty spoke of them as "veins and arteries to distribute back and forth . . . the product of Husbandry and Manufacture"; while later Cantillon referred approvingly to those who "buy the wares of the country . . . [and] give for them a

fixed price to sell them again wholesale and retail at an uncertain price," thereby bearing the burden of this perpetual uncertainty. Later, in the days of industrial capitalism, political economy found a justification of the middleman. Contrary to being an interloper he now became for economic theory a necessary cog in the economic machine. This justification was the principle of specialization. The middleman performed the function of linking the producer with a market demand that was becoming increasingly distant in both time and space, and in specializing on this task he could do it more efficiently and more cheaply. Moreover in buying from the producer in anticipation of sale and in carrying stocks of goods through space and time he was taking important marketing risks, thus lifting them off the shoulders of the manufacturer. For a century economic textbooks preached the virtues of the middleman and his beneficent economic role. Even the dealer who never handled commodities, the pure speculator and the dealer in "futures," was extolled as one who moderated price fluctuations by his anticipatory action and both bore and eliminated market risks which would otherwise have fallen on producer or consumer. But once again the role of the middleman has been brought into debate. Questions have been raised as to whether costs of marketing and distribution are not an unnecessary burden. Pressure comes on the one hand from new large scale marketing organizations and on the other from large scale manufacturers to displace the plethora of old fashioned middlemen and to carry on marketing in a more simplified and coordinated way. The modern advertising age, with its vogue of proprietary articles and branded goods, has witnessed a growing tendency in certain spheres for manufacturing firms to market their own products and to convert even the retail shopkeeper into a virtual commission agent.

The middleman in fact, along with the money lender, was the prototype of the later bourgeoisie. His rise synchronized with the spread of trade and of money dealings which gradually disintegrated feudal society; and his profits constituted one of the early sources of capital accumulation. Largely for this very reason the spokesmen of feudalism as represented by the schoolmen and the canonists combined with the petit bourgeois interests of working craftsmen and peasantry to vilify the activities of the "engrosser" and the "forestaller." To an increasing extent a more well to do group in the early craft guilds came to specialize on trade and finally to dominate the guilds; later these merchant capitalist interests tended to form special mercantile companies of their own (for instance, the Tudor livery companies), thereby securing by right of charter a monopoly of their particular sphere of trade. Monopolies of this kind, granted by right of incorporation, seem to have played in all countries a primary role in the period of merchant capitalism and to have constituted a primary factor in the accumulation of merchant capital. It was common in western Europe, more particularly in the Netherlands in the thirteenth and fourteenth centuries and in Britain in the fifteenth and sixteenth, for the older and wealthier merchant interests to concentrate exclusively on the export trade or sometimes on interregional trade, to organize special trading companies in this sphere and so to form a kind of new bourgeois aristocracy. On the heels of this tendency an intermediate group of capitalists, engaged in internal wholesale trade, tended increasingly to take the role of supervising and organizing the work of manufacture, thereby paving the way for the rise of the industrial capitalist and the conversion of the merchant manufacturer into the industrial entrepreneur. In the English woolen industry this was seen in the rise of the capitalist clothier, who bought the raw wool and gave it out to small craftsmen under the domestic system and then organized the collection and sale of the finished cloth. A similar development occurred in certain branches of mining—tin mining in Cornwall and Devon, silver mining in Saxony—where various middlemen dealers in ore or else smelters came in the course of time to fill the role of capitalists who made money advances to the working miners and who later became their virtual employers.

Since the beginning of the twentieth century and especially since the World War the distributing and marketing apparatus, as distinct from that of production proper, has assumed growing proportions. In general the problem of the marketing of quality goods is more complex than that of more standardized goods of prime necessity; and the growing part played by luxury articles in the production and consumption of the richer industrial countries has given to distribution an increasingly important place. But this is clearly only part of the reason for the growing weight of marketing and distribution in economic processes. In an age of monopoly-capitalism, marketing technique with advertise-

ment as its keynote becomes a principal instrument for winning or holding a monopoly position—for capturing a special clientele of buyers, a "private market," in which the successful seller will be partially shielded from the competition of rivals. It is arguable that under modern conditions a firm enlarges its market more frequently and more effectively by increased expenditure on marketing devices to capture consumers than by that price cutting to woo consumers which was assumed by the classical theory of competition to be the normal procedure.

This tendency with its accompanying vogue of proprietary articles and branded goods has led to a considerable narrowing of the role of the old style independent middleman. His sphere has been encroached upon in three main ways. In the field of retailing he has been increasingly supplanted by the chain store and the large department store. In the wholesale market he has been supplanted either by the manufacturer expanding vertically so as to control directly the purchase of materials and the sale of his product or else by special cooperative selling organizations operating on behalf of producers, such as some forms of the cartel or the agricultural cooperative society.

The degree of encroachment upon the position of the middleman in wholesale trade has differed widely in different countries and in different industries. In Germany the growth of cartelization in nearly all important industries has eliminated over a wide area the middleman with his specialized knowledge and connections who used to link the producer with his market. In Great Britain, on the other hand, this tendency is much less developed. Some vertical integration has taken place in heavy industry. Some 20 to 25 percent of coal, for instance, passes direct to associated concerns; and a beginning has been made in the organization of district selling agencies for the marketing of coal. Yet in textiles (particularly in cotton), in agriculture, in the handling of home grown and imported foodstuffs the old merchant firm still holds sway. In general it would seem that where a commodity is standardized and demand is regular the economies of integrated marketing are sufficiently great to lead to the displacement of the middleman. This is particularly so where the commodity is capable of being branded and converted into a proprietary article. Where, on the other hand, a commodity serves a variable quality demand, the work of marketing becomes a more complex business; and specialization in studying particular areas of the market by specialized merchanting firms has peculiar advantages. The tendency for the middleman to persist in these cases is strengthened where the producing units are small and cannot easily undertake their own marketing.

Since the World War there has been considerable discussion of the rationalization of distribution, which is not easily distinguishable from the desire to restrict output on a falling market. It is significant of the changed spirit of the twentieth century that in a number of cases the state has lent definite aid to this tendency: for instance, in Germany the Cartel Court with its powers of compulsorily constituting a cartel; in Britain the compulsory powers adopted under act of Parliament for constituting selling associations, with quota schemes, in the coal industry. Some would have the state go further and set up new organizations, such as import boards, to fill the role which the middleman and speculator used to perform but to fill it in the social interest and on a unified scale. Apart from the experiences of war time and outside Soviet Russia this tendency has hardly as yet passed beyond the realm of projects. But the experience of wartime controls and program committees and of Soviet Russia contains much that is not only interesting but which may well be, in addition, prophetic of future successors to the middleman.

MAURICE DOBB

See: MARKET; MARKETING; RETAIL TRADE; WHOLESALING, BROKER; SALESMANSHIP; ADVERTISING; SPECULATION; PROFITEERING; RISK; COMMERCE; CAPITALISM; PUTTING OUT SYSTEM; COOPERATION; RATIONALIZATION.

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MIDHAT PASHA (1822–83), Turkish statesman. Midhat was educated for the public service and began his career in the secretariat of the grand vizier. He achieved fame as one of the most outstanding administrators of modern Turkey and became very influential among the Young Turks, who hoped to save the Ottoman Empire from destruction by reforming its political system after a western European model. In 1861 he was appointed governor of Nish (Serbia —now in Jugoslavia) and was so successful in remodeling the administrative system that his plans were adopted as the principal bases of the "law of the vilayets," which reorganized local administration throughout the empire in 1865. At this time Midhat was made governor of the vilayet of the Danube, which combined under a single administration the former vilayets of Silistra, Vidin and Nish. His rule in the provinces was marked by order and economic prosperity; he governed with the cooperation of the leaders of the native population, only a small percentage of which was Turkish, winning their support by enforcing strict equality between Moslems and Christians. An effective policing system was set up and brigandage was wiped out. Roads and bridges were built; agricultural banks were established and other measures were taken to aid the agricultural population. Education was fostered and incompetence in administration eliminated to a great degree. A severe setback was given to pan-Slavic intrigues. Midhat worked with equal success after being transferred to the governorship of Bagdad.

He was a principal actor in the deposition of Sultan 'Abd al-'Azīz in May, 1876, and that of his successor Murād v the following September, believing that he was thus clearing the way for a reforming sultan in the person of Sultan Abdul-Hamid ii, who would be guided by Midhat himself. Grand vizier from September, 1876, to February, 1877, he succeeded in obtaining the proclamation of a constitution which largely embodied his ideas. The actual character of the young sultan, however, was conservative and autocratic; Midhat was banished and although he subsequently held government office was always opposed by the sultan and was finally assassinated with his connivance.

The constitution of Midhat was suspended from the spring of 1877 until 1908, when it was put into force; with a limited number of amendments it remained the fundamental law of Turkey until 1920. While on the one hand it recognized to a large extent the traditional power of the sultan, it set up a parliament of two houses, which was allowed considerable rights of debate and decision and to which the ministry, appointed by the sultan, was responsible through a complicated process. All citizens of the empire were to be called Ottomans and to have complete political equality regardless of race or religion; finances were to be budgeted; the courts were to be independent and to administer not religious but civil law; elementary education was to be made universal; and the army was to consist of non-Moslem as well as Moslem elements.

Midhat was the author of a number of works on political subjects, including *La Turquie, son passé, son avenir* (Paris 1878, 2nd ed. 1901; tr. in *Nineteenth Century and After*, vol. iii, 1878, p. 981–1000).

ALBERT H. LYBYER

Consult: Ali Haydar Midhat, *The Life of Midhat Pasha* (London 1903); Sax, Carl von, *Geschichte des Machtverfalls der Türkei* (2nd ed. Vienna 1913) p. 375–76, 393–94, 410–13, 419–27, 485–87; Halidé Edib, *Turkey Faces West* (New Haven 1930) p. 86–91; Toynbee, A. J., and Kirkwood, K. P., *Turkey* (London 1926) p. 47–49, 52.

MIELCZARSKI, ROMUALD (1871–1926), Polish cooperator. In his youth Mielczarski was persecuted by the czarist police for his socialistic activities; he was imprisoned for almost two years in St. Petersburg and was banished from Russian Poland. After studying economics in Switzerland and Belgium he spent five years in Russia, where he engaged in the mining industry and in business until 1905; in that year, following the first Russian revolution, he was allowed to return to his country. Together with Eduard Abramowski and Stanisław Wojciechowski, Mielczarski founded the Towarzystwo Kooperatystów (Society of Cooperators) in Warsaw, which developed an intensive campaign of propaganda and organization on behalf of consumers' cooperation. Mielczarski devoted himself to the economic and commercial aspects of the new movement and in the publication of the society, *Spolem* (Together), he published a series of articles containing practical hints for the organization and commercial management of consumers' cooperatives. But above all he devoted himself to the task of organizing a cooperative union and its wholesale department. The latter was founded in Warsaw in 1908 as the purchasing bureau of the Society of Cooperators; in 1911, when the obstacles created by the Russian administration were removed, it became the independent Związek Spółdzielni

Spożywców (Union of Consumers' Cooperatives). Mielczarski became the head of the purchasing bureau and later, as director of the wholesale department, the leading figure in the cooperative wholesale society. With great devotion and skill he directed the central cooperative organization under the difficult conditions of the World War and the still greater difficulties of the post-war period of economic reconstruction. An advocate of industrial democracy and an ardent patriot, Mielczarski saw in the cooperative movement an instrument of economic emancipation of the working class in Poland as well as a means of achieving the economic and consequently political independence of his country. He succeeded in organizing large masses of Polish people in cooperative unions and in instilling into them the spirit of independence and a sense of social responsibility.

MARJAN RAPACKI

Works: *Cel i zadania stowarzyszenia spożywców* (The aim and tasks of the society of consumers) (2nd ed. Warsaw 1919); *Rachunkowość stowarzyszenia spożywczego* (The bookkeeping of consumers' societies) (10th ed. Warsaw 1932).

Consult: Wojciechowski, Stanisław, *Romuald Mielczarski, pionier spółdzielczości w Polsce* (Romuald Mielczarski, the pioneer of cooperation in Poland) (Warsaw 1927); Dąbrowski, Saturnin, *Program spółdzielczy Romualda Mielczarskiego* (Warsaw 1927).

MIEROSŁAWSKI, LUDWIK (1814–78), Polish revolutionary leader. Mierosławski was born in France of Polish-French parents and educated in Poland, where he came under the influence of such romantic writings as those of Mickiewicz and Lelewel and in general responded to the intense patriotic atmosphere characteristic of the years preceding the Polish insurrection against Russia in 1831; his personal experience during the insurrection still further intensified his patriotic sentiments. Capable, imaginative and endowed with a brilliant and convincing style, at the age of thirty he had acquired renown as an orator, political writer and historian. His *Powstanie narodu polskiego w roku 1830 i 1831* (The insurrection of the Polish nation . . . , 8 vols., Paris and Posen 1845–81) was considered one of the best works in the field of military literature. On the strength of his reputation and the important role he played in the Polish Democratic Society as well as in a series of international conspiracies, he assumed the leadership in the Polish revolutionary uprisings of 1846 and 1848; and he also led the uprisings in Sicily, in the Palatinate of Bavaria and in the Grand Duchy of Baden in 1849. He became the recognized leader of the revolutionary wing in the movement which aimed at the political liberation of Poland by force of arms, as opposed to the more moderate group which believed that the cause of Polish freedom would ultimately gain more through concentration upon the slow and laborious task of political organization and economic development. Mierosławski linked the program of political liberation with that of abolition of serfdom and peasant ownership of land. He further associated the Polish revolutionary cause with the struggle for democracy in Europe and advocated the most active alliance of Polish forces with every revolutionary campaign against European autocracies. A liberated Poland, he held, would assume that civilizing function in the east which France had performed in the west. He continued his revolutionary activities undaunted by the setbacks of the 1840's; he organized international conspiracies, established military training centers to supply the revolutionary forces with efficient officers and was instrumental in bringing about the Polish insurrection in 1863. Defeated in the first battle of this uprising Mierosławski returned to Paris, where he devoted the remainder of his life to historical writing and to political controversy with other Polish émigrés.

ADAM LEWAK

Important works: *Histoire de la révolution de Pologne*, 3 vols. (Paris 1835, 2nd ed. 1838); *Kurs sztuki wojskowej* (Outline of military art) (Paris 1845); *Rozbiór krytyczny kampanii 1831 roku i wywnioskowane z niéj prawidła do wojny narodowéj*, 2 vols. (Paris 1845), tr. into German as *Kritische Darstellung des Feldzuges vom Jahre 1831 . . .* (Berlin 1848); *De la nationalité polonaise dans l'équilibre européen* (Paris 1856); *Pamiętnik Mierosławskiego (1861–1863)* (Memoirs of Mierosławski), ed. by J. Frejlich (Warsaw 1924).

Consult: Miłkowski, Z., *L. Mierosławski naszkicowany* (A sketch of Mierosławski) (Paris 1870); Klaczko, J., *Katechizm nierycerski* (Unheroic catechism) (Paris 1859); Lewak, A., in *Przegląd współczesny*, vol. ii (1929) 295–306; Limanowski, B., in his *Szermierze wolności* (Champions of freedom) (Cracow 1911) p. 203–43.

MIGNET, FRANÇOIS AUGUSTE MARIE ALEXIS (1796–1884), French historian and journalist. Mignet is popularly remembered for his *Histoire de la Révolution française* (Paris 1824; 14th ed., 2 vols., 1883: English translations—Bohn's Standard Library, London 1856; Everyman's Library, London 1915; History of Nations series, Philadelphia 1906), but his most significant contributions were in the history of the six-

teenth century. He rose to the front rank of French historical scholarship by an unconventional route. He received his formal training in the École de Droit at his native city, Aix, practised law and after moving to Paris in 1821 devoted part of his time to journalism. Even while at Aix, however, his chief interest was in history, and he pursued his studies with such success that at the age of twenty-five he shared the prize offered by the Académie des Inscriptions et Belles-Lettres for the best essay on the institutions of St. Louis. His impulse to write on the French Revolution grew out of his contact with Talleyrand, who had been attracted by his articles in the *Courrier français*. Convinced that the revolution was the logical outgrowth of conditions in France and in Europe, he hoped that a sympathetic interpretation of it would help to stem the strong tide of reaction which had been running since 1820. The resulting volume was an astounding tour de force accomplished in four months, and the work became an instant success. After the revolution of 1830, in which he took a leading part as one of the founders of the *National*, Mignet withdrew from active politics and devoted himself wholly to history. He accepted the directorship of the archives of the Ministry of Foreign Affairs, a position which he held until the Revolution of 1848. When Guizot as minister of public instruction decided upon the great *Collection de documents inédits sur l'histoire de France*, he gave Mignet the task of editing the papers on the Spanish Succession. The four volumes of *Négociations relatives à la succession d'Espagne sous Louis XIV* (1835–42) carried the work only to the Peace of Nijmegen, although his masterly introduction extended to the Treaty of Utrecht. Mignet's other works on the sixteenth century include the brilliant *Antonio Perez et Philippe II* (Paris 1845, 4th ed. 1874; tr. by Charles Cocks, London 1846); *Histoire de Marie Stuart* (2 vols., Paris 1851; 5th ed. 1877; tr. by A. R. Scoble, 1 vol., 7th ed. London 1887), which presented the first balanced view of the Scottish queen, and *Charles Quint, son abdication, son séjour et sa mort au monastère de Yuste* (Paris 1854, 10th ed. 1882). Mignet long assembled materials for a work on the Reformation but never completed it. As perpetual secretary of the Académie des Sciences Morales et Politiques after 1837 he did much to make that body an effective force in the development of French historical science.

HENRY E. BOURNE

Consult: Petit, Édouard, *François Mignet* (Paris 1889); Simon, Jules, *Mignet, Michelet, Henri Martin* (Paris 1890); Gooch, G. P., *History and Historians in the Nineteenth Century* (2nd. ed. London 1913) p. 193–99; Simon, Jules, "Éloge de M. Mignet" in Académie des Sciences Morales et Politiques, *Séances et travaux*, vol. cxxiv (1885) 885–924.

MIGRATIONS

PRIMITIVE ..... ROLAND B. DIXON
ANCIENT AND MEDIAEVAL ..... LOUIS HALPHEN
MODERN ..... IMRE FERENCZI

PRIMITIVE. The movements of people over considerable distances and on a large scale with the intention of abandoning their former homes for some more or less permanent new domicile have played an important part from the very beginning of human history. The general causes discernible in primitive migrations have continued operative down to the present, although with changed importance and in somewhat different forms. They may be grouped in two broad categories: the physical causes, such as great cataclysms of nature and climatic changes; and the socio-economic causes, such as mass expulsion, defeat in war by invading migrants and the more voluntary motivations, like the desire to exploit new economic opportunities or to conquer new lands.

Physical factors seem to have played an important role in prehistoric migrations. The successive advances and retreats of the ice sheet during glacial times were thus a direct cause of migration on a large scale, for the human occupants of much of northern Eurasia and perhaps of North America were irresistibly forced out of their habitats. On a far smaller scale local cataclysms—volcanic eruptions or great floods—have doubtless rendered considerable areas uninhabitable, with the result that their occupants have had to migrate. The secular changes of climate within a given area may tend to force the inhabitants to emigrate to another locality, where the accustomed conditions are still to be found; or they may lead to an immigration or invasion of a foreign group into a region adapted to its traditional mode of life. In the opinion of many students one of the most potent causes for migrations on a large scale has been progressive desiccation. Thus Huntington contends that in

inner Asia, where the peculiar conditions of pastoral nomads make relatively slight changes in rainfall of some consequence, a pulsation of climate has occurred, in which a period of increasing aridity has been followed by one of greater rainfall, succeeded in turn by another period of desiccation. During the periods of desiccation, he believes, the pastoral nomads of this area were forced by the shortage of pasture to emigrate, and he correlates the great historic outpourings of peoples from this region with these climatic pulsations. It has been thought by some that an increasing aridity was the cause for the abandonment of many of the cliff dwellings and other prehistoric sites in the southwestern United States; in this instance, however, it is doubtful whether the degree of increase in aridity would have been sufficient to have forced the abandonment of any large proportion of sites, and this movement is explicable at least in part on other grounds.

It is probable that the second category of causes has stimulated a far greater number of migrations. Most frequent among them perhaps has been the pressure of inadequate food supplies due to increase of population. This pressure varies in its intensity and effectiveness according to the cultural status of the people. Hunting and fishing or food gathering tribes are most affected, for only a limited number of persons can draw their food supply from any given area. When this limit is exceeded, emigration becomes imperative unless the local inadequacy can be remedied by trade or the population is reduced by war, famine, epidemic or infanticide. A pastoral nomad people is limited in numbers by the size of the herds or flocks which can be fed. Among agricultural peoples the food supply may be greatly increased, particularly under irrigation, so that with the added possibility of storing large quantities of food and the development of import trade migration for the purpose of obtaining food tends to become unnecessary. War is also a potent cause of migration: the defeated may find their only safety in flight. In Polynesia, for example, this has been a frequent cause of migration. In North America the warlike prowess of the League of the Iroquois forced many of the neighboring tribes to move westward in order to escape annihilation. In South America a Tupi tribe of ten thousand fled from the Portuguese in search of an unmolested area, leaving the coast of Brazil in 1540 and migrating up the Amazon; three hundred reached Chachapoyas in Peru nine years later. In Africa the Bushmen were driven southward from the lake region by invading Bantu peoples, who later forced them into the Kalahari desert. The irresistible movements of the Tai, or Shan, peoples of southern China into Siam and Indo-China were due largely to the pressure of the expanding Chinese. The quest of wealth or loot has also led to folk movements on a large scale. The traditional Maori migration to New Zealand was in part a quest for the valuable nephrite stone which was there to be had in large quantities. The Tungus tribes that invaded and settled in large numbers in northern China, the barbarian invasions of southern Europe, the Turkish conquest and settlement of parts of western Asia, these and many other important migrations were caused at least in part by the prospect of loot and wealth. Serious epidemics and plagues have also probably been responsible for considerable movements of peoples.

Migrations, however caused, are more or less definitely controlled or guided by factors of environment both physical and social. There is often a strong tendency for a migrating group to hold conservatively to the same type of environment; pastoral peoples, for example, attempt to remain on grasslands, where their accustomed life may be continued. But sometimes a fairly radical change may be made, as in the case of the Algonquian and some of the Siouan tribes, who abandoned their forest environment and semi-sedentary hunting and agricultural life for that of roving hunters on the treeless plains. The Aryan ancestors of the Hindus left the desert and oasis environment of Turkestan for the better watered region of the Punjab and upper Ganges valley, which was more suitable for agriculture. Topographic factors such as river courses and mountain passes have often exercised striking control over migrations. The southward movement of the Shan peoples of southern China spread primarily along the courses of the Menam and Mekong. The Scythians and other northern invaders of Asia Minor and northern Mesopotamia could pass the barrier of the Caucasus only through the centrally located Daryal Pass or through Derbent, which afforded a passage around the range's eastern end. The hordes of central Asiatic peoples poured out from this great reservoir almost wholly by way of the broad corridor valley of Dzungaria or by the narrow and more spectacular Dzungarian gate. Sea winds and ocean currents have guided emigrants from southeast Asia and Indonesia out into the heart of the Pacific,

although the Polynesians in their eastward migrations traveled in the main against the prevailing winds and currents. Land movements in one direction may be difficult or impossible because of the presence of a strong and warlike people. Knowledge of the existence of earlier offshoots or colonies of their own people may turn the course of later migrants in the direction of these established settlements.

Migration affects both the migrating group and others with whom they come in contact. The migrants may be reduced in numbers as a result of hardships, of war with peoples through whom they have to force their way or of sickness resulting from a radical change of environment. Their culture may be more or less profoundly modified on the one hand by adaptation to the new environment and on the other by borrowing from the peoples adjacent to their new settlement. Further their racial characteristics may be modified through mixture with racially distinct groups and their language influenced as a result of assimilation with the tongues spoken in the new habitat. Effects similar in many respects may be produced among the peoples through whom the migrants pass or among whom they finally settle.

Evidences of migration among living primitive peoples may be afforded by archaeological data, oral tradition, linguistic factors, racial characteristics or cultural elements. Archaeological discoveries supply the meager evidence available for the prehistoric period. The Maori of New Zealand possess abundant traditions of their migration from the Society Islands in the fourteenth century and the Leni-Lenape, or Delaware Indians, have preserved in their *Walam Olum*, or Red Book, a crude pictographic record of their legend of migration from some region probably north of the Great Lakes. The Navaho and Apache of the southwestern United States show by their Athapascan speech that they are migrants from the Canadian northwest, where most of the Athapascan tribes are found. Similarly, the affiliation of Polynesian speech with the Malay and the Mon-Khmer languages of Indo-China is one of the evidences for believing that these island peoples once lived in southeastern Asia. The blondness found among some of the Berber peoples of north Africa is believed to indicate an early immigration of peoples of Nordic type from Europe; and certain physical features of the Hottentots indicate their migration from northeastern Africa, where their mixture with Hamitic peoples must have occurred. The cattle culture of the Yakuts, a Turkish speaking tribe of northeastern Siberia, shows them to have migrated northward from the region of the Mongolian border. The far reaching distribution of typical forms of Inca pottery is in part a measure of the wide expansion of these people in western South America. As cultural elements, however, may be diffused in trade or otherwise from tribe to tribe and people to people and may thus be found far from their source without having been carried by any migratory group, great care is necessary in interpreting such data. Thus the bronze or copper objects found in the chalcolithic culture of western China are interpreted by some authorities as evidence that the knowledge of metal was brought by an immigrant people from the west, whereas others see in these objects only an indication of far reaching trade.

The primary migrations by which man originally spread over the world can as yet be traced only vaguely. Little can be said concerning the movements in early palaeolithic times. At the beginning of the later palaeolithic, in Aurignacian times, the older Mousterian Neandertal peoples in western Europe were probably replaced by the immigration of a more modern type from northern Africa. Later in the epipalaeolithic, or early neolithic, there was probably a considerable movement of brachycephalic Alpine peoples from the eastern border regions into central and western Europe, although some students tend to minimize its importance. A later movement, in early chalcolithic times, of nomadic peoples from the Russian steppes is quite generally accepted. When and by what routes the Indo-European speaking peoples spread over Europe is still a matter of controversy; it seems most probable, however, that they came from somewhere in the Caspian region. The Ugro-Finnic peoples of northern Europe seem to have paralleled this westerly drift farther north.

The migration of man into the New World has been a much debated question with reference to both period and routes. The hypothesis that North America was first peopled from Scandinavia by way of Iceland and Greenland is now generally discredited. Suggestions as to Negro immigration from Africa at any period prior to Columbus' discovery lack reputable evidence and are as chimerical as the legends of Atlantis. The frequently proposed theory of a trans-Pacific migration from southern or eastern Asia by way of the Pacific islands cannot be ap-

plied to the original peopling of the New World, since early man was incapable of making the long sea voyages required and there is no evidence that man reached the Polynesian area until modern times. On the evidence of culture parallels it has frequently been assumed that trans-Pacific movements to South as well as North America have taken place on a considerable scale in later times. The subject is extremely controversial; some slight contacts between Polynesians and South America may have occurred during the Christian era, but there is as yet no valid evidence for migration on an appreciable scale. It is now the generally accepted theory that the primary migration as well as all other significant migrations of man into the New World took place by way of Bering Strait, but the time of the first movement still remains undetermined. Some students relying on the absence of unequivocal evidence for preglacial or interglacial man believe that these migratory movements did not take place until postglacial times. Others on the basis of the cumulative strength of recent archaeological and cultural evidence and the fact that the discovery of *Sinanthropos* in China proves the presence there of a human precursor in earliest Pleistocene times believe it increasingly probable that man reached North America prior to the last glacial phase. The older view that only a single although perhaps long continued wave of immigration came into the New World by this route, bringing a single type of man, and that thereafter all movements across the strait ceased is now generally abandoned. The theory now held is that there were a number of periods of migration, each of which periods brought different racial factors and of which the latest occurred perhaps not more than one or two thousand years ago.

The routes by which these immigrants spread over North America are still largely matters of theory. A movement southward along the Pacific coast, although in line with some of the evidence of relatively recent cultural diffusion and small scale movements, is as yet uncorroborated for any early period by archaeological evidence. Migration up the Yukon valley and thence across the Rocky Mountains into the plains and so southward seems the most probable but again lacks confirmation. The Eskimo comprise two discrete elements: one originating in the interior region west of Hudson Bay moved northward to the coast and then to the east and west; the other starting from Bering Strait or perhaps northeastern Siberia moved eastward along the coast and amalgamated with the first. The Eskimo also moved southward from the strait and displaced earlier Indian peoples nearly as far as Mount Saint Elias. The Athapascan stock has moved south and east from the interior of Alaska and the Mackenzie valley. One branch followed along the Columbia River to the Pacific coast and thence southward as far as northern California; another moved south through the plains and then turned westward into New Mexico and Arizona. The Algonquian tribes seem to have spread from the region around the Great Lakes; some moved eastward to Labrador and the northern Atlantic states, whereas others turned westward into the plains, some perhaps extending their wanderings as far as the Pacific coast. The Siouan stock seems to have had its proximate area of dispersal in the lower Ohio valley and the region between the Great Lakes and the Mississippi; thence some tribes moved eastward to the central Appalachian region, whereas others moved west into the plains, some retaining their agricultural and village life, others taking up a purely nomadic hunting life. The Iroquoian tribes moved eastward and northeastward from an earlier habitat which was perhaps in the middle Mississippi valley region. One branch passed south of the Great Lakes and then down the Saint Lawrence, displacing the Algonquian tribes in Ontario and New York; another turned more to the southward, ultimately settling along the western slopes of the southern Appalachians. The Caddoan tribes migrated northward from the region of Louisiana and eastern Texas, the Pawnee stopping in Nebraska, the Arikara going to the bend of the Missouri River in North Dakota. The Creeks, Choctaw and other Muskhogean tribes may have drifted eastward from the southern plains. The Uto-Aztecan tribes have migrated over a wide territory. From a proximate original habitat in the region of Utah and Nevada and the adjacent western borders of the northern plains they have moved southwest to the Pacific coast in southern California and southward through the highlands and Pacific coast of Mexico to the valley of Mexico, where the Aztecs and others stopped; still other groups continued along the western coast of Central America as far as Costa Rica and one small colony to the gulf coast of Panama. Opinions in regard to the movements of the Mayan tribes differ, some holding that the movement has been from the north to the south and southwest, whereas others

believe the early home of the stock lay in Guatemala and Honduras.

The primary migrations which first brought man into the continent of South America must have filtered in by way of the narrow corridor of Panama. The chain of the Antilles presents an alternative but doubtless much less important highway. To immigrants by way of Panama three possible courses were open: a southward movement along the Pacific coast; a movement up the Cauca and Magdalena river valleys to the highlands, along which the way lay open toward the south; or an eastward drift along the Caribbean shore to the mouth of the Orinoco, up whose course the route led to the great Amazon basin. There is evidence to indicate in a general way the lines of the migrations of some of the more important linguistic stocks on the continent. The Chibchan stock of Colombia and northern Ecuador seems to have extended from the south northward, reaching as far as the borders of Nicaragua. The Quichuan stock, of which the Incas were a part, probably moved southward along the highlands, from Ecuador almost to the Bolivian border. The movements of the Aymará are still highly problematical. The Araucanian tribes of Chile are now thought to have been originally a nomadic hunting folk of the Argentine pampas, which moved westward across the Andes to the Chilean coast. After the conquest by the Spaniards some retraced their steps eastward into the pampas. The Arawak stock seems originally to have been settled on the Caribbean shore of the continent. From here one branch followed the chain of the Antilles northward as far as Cuba, whereas others moving southward followed along the eastern base of the cordillera as far as Bolivia. If Rivet is correct in regarding the Uru as belonging to this stock, they occupied also a portion of the high, desert Bolivian plateau south of Lake Titicaca. The Carib tribes, on the other hand, have generally been thought to have moved from central Brazil northward and westward, following in general the Rio Negro and the Amazon and Orinoco rivers to the Caribbean shore, disrupting the older Arawak tribes and pressing on further through the Lesser Antilles, where they exterminated or absorbed the Arawakan aborigines. Recently a contrary view has been put forward by Métraux, who believes the Caribs to have originated north of the Amazon and to have moved southward to central Brazil. The Tupi or Tupi-Guarani tribes spread according to Métraux from the region of the Amazon-Paraguay divide, the Guarani moving south into what is now Paraguay and others, such as the Tupi proper, going eastward to the Brazilian coast, whereas still others moved westward up the Amazon to eastern Peru and Ecuador. Two important movements in this stock occurred just after European contact, the Chiriguano migration from Paraguay westward to the Bolivian foothills of the Andes and the Tupi migration up the Amazon to northeastern Peru.

On the Asiatic continent the Samoyeds and various other arctic Ural-Altaic tribes moved, probably at an early date, northward to the arctic coast of Siberia, whence they drifted westward into northern Russia. From the region about Lake Baikal the Yakut migrated in early mediaeval times northward down the Lena valley nearly to the arctic coast. The Tungus tribes from an early home in the valley of the Amur and Manchuria and perhaps extending into the lower Yellow River valley in China migrated northward and westward; subsequent movements of these tribes as well as of the nomads mainly of Turkish speech who moved into western Asia and Europe from the central Asiatic region are considered in the following section (ANCIENT AND MEDIAEVAL). Probably extending back as far as neolithic times there took place eastward migrations of northern and eastern European peoples which contributed to the prehistoric population of China and Japan. From the Aral-Caspian basin region peoples speaking Indo-European languages migrated southward in the second millennium B.C. The ancestors of the Hindus turned eastward into the Punjab and the upper Ganges valley and later overran most of India. Others turned westward and crossing the Iranian upland came to the borders of Mesopotamia, where as the Kassites they invaded and conquered Babylonia, which they ruled for some six centuries. Another group, the Mitanni, established themselves on the Tigris and adjacent parts of the fertile crescent. Later about the beginning of the first millennium the Medes and subsequently the Persians dominated the Iranian plateau and conquered much of western Asia. The Indo-European element among the peoples of Asia Minor, as illustrated, for example, by the Hittites, seems to have migrated hither perhaps as early as the third millennium across the Bosporus from Europe. In southeastern Asia the Chinese, Tai and Tibeto-Burman peoples have migrated widely. There is as yet no positive evidence that the Chinese were, as some have believed, immigrants from central Asia. From their earliest known habitat at the

bend of the Yellow River, however, they spread slowly to the northeast and south, displacing and absorbing the previous, non-Chinese peoples. In their southward advance they forced the Tai speaking tribes to migrate down the valleys of the Menam and Mekong and to displace and conquer the older Mon-Khmer tribes of Indo-China. One group, the Ahom, moved more to the west, and in early mediaeval times occupied Assam, to which they gave their name. The Tibeto-Burman tribes of eastern Tibet began, at least as early as the beginning of the Christian era, to migrate southward along the valleys of the Irrawaddy and Salween. The Karens were perhaps the first of these, followed by the Burmese and later the Kachins. They came ultimately to occupy most of what is now Burma, displacing the older Mon-Khmer peoples. Some of the Tibeto-Burman tribes moved further west, occupying the Naga Hills region of Assam. Two migratory movements seem to have reached Japan: one with a considerable north European element came in by way of Korea from the west, whereas a second migration of peoples allied to the Malays and Polynesians came in from the south, either from the Chinese coast by way of Formosa and the Philippines or the Micronesian chain. The former migration was early, the latter perhaps as late as the middle of the first millennium B.C.

In the Oceanic area migratory movements have been of great importance. The earliest traceable would seem to be that of the Negrito peoples, who passing eastward from Indo-China at the end of the glacial period spread through much of Indonesia, while these islands, still a continuous land area, formed part of the Asiatic continent. They were followed by peoples of Australoid type, who migrated at least as far as New Guinea and thence turned southward to occupy the Australian continent. A wave of Negroid tribes then followed, which dominated Melanesia and spread but slightly into Australia. A considerable migration of peoples of north European type came from eastern Asia by routes which are still uncertain, and spread far into Polynesia. A last great migration was that of the Malayan peoples, who from southeastern Asia poured out into Indonesia, overwhelming the older population; then passing along the edges of Melanesia and through Micronesia they flooded into Polynesia, giving it its dominant population at the period of discovery. This Malayan migration took place, so far as Polynesia was concerned, apparently in two waves, the latest not leaving Indonesia until this latter region had been to some extent influenced by Indian culture, which reached there about the beginning of the Christian era or possibly some centuries before.

In Africa one of the earliest migrations was that of the Hamitic or proto-Hamitic peoples, who moving from the region of the horn of Africa (or perhaps coming as immigrants from southern Arabia) passed into the Nile valley and thence westward north of the Sahara. This movement was largely completed by early predynastic times. During the early centuries of the Christian era and on into mediaeval times further migrants from this group pushed westward through the Sudan to Nigeria, profoundly affecting the older Negro peoples there and in other regions along the western coast. Hamitic influences were also carried southward and southwestward by the migrations of the Bantu peoples, among whom the Hamitic element was strongest along the east coast. The Bushmen of southern Africa seem to have moved southward from the northern lake region, following the grasslands to the Zambesi; after crossing the latter they spread over most of the southern part of the continent. The Hottentots followed at first the same general direction but turned more to the west, crossing the upper Zambesi and continuing north of Kalahari, then turning south along the western coast. At least as early as the middle of the first millennium B.C. there had begun a Semitic movement from southern Arabia into Abyssinia. The Malayan migration to Madagascar, from which a large proportion of the present population is derived, is now thought to have gone around the margins of the Indian Ocean rather than directly across it; thus it may in part at least have followed the east African coast southward, coming to Madagascar from the west.

ROLAND B. DIXON

ANCIENT AND MEDIAEVAL. The most important migrations in ancient and mediaeval times were those of nomadic peoples who wandered continuously with their families and belongings and those of maritime peoples who left their homes to seek new lands. These migrations in turn stimulated others as the migrants displaced settled peoples whom they were unable to assimilate; many Armenians, for example, were driven to Cilicia and to other parts of Asia Minor by the successive invasions that took place in the Near East, and the Balkan Slavs and Bulgars were continually driven back under the pressure of

nomads from the Russian steppes. Likewise the invasion of Britain by Germanic tribes during the fifth and sixth centuries forced some of the Britons to migrate to the region which is now Brittany. Sometimes the tactics of the conqueror took the form of mass expulsion, as in the case of the Saxons, whom Charlemagne in 799 commanded to move to the interior of the Frankish empire. In the case of the Norman conquerors in southern Italy and Sicily and of some of the crusaders in the Holy Land the migrations were comparable to colonization projects, and in that of the Greek and Phoenician colonists who traveled the length of the Mediterranean (*see* COLONIES) colonization was indistinguishable from the movement of maritime peoples.

The chief reservoir of the nomadic migrations by land during antiquity and the Middle Ages was central Asia—Mongolia, Chinese Turkestan and the neighboring territories which extend into the steppes of European Russia. The soil of most of this region is unsuitable for agriculture; and nomads, sometimes suffering great privation, for centuries grazed their stock in these immense pastures. These unstable nomadic peoples became plunderers of their sedentary neighbors whenever opportunity arose. Their plundering activities and consequent migrations followed a cycle of development. Successful exploits of armed nomads brought to the victors wealth and prestige among their fellow tribesmen, who gathered around them, paid homage to the successful chief and followed him in his raids. The group grew larger and its audacity increased as the sedentary neighbors lost control over the steppes adjacent to their frontiers. The nomads then advanced in masses beyond these frontiers; they succumbed to the wealth of the invaded countries, to the facilities offered by the new environment and were gradually won over to the new life. The parts of the group which remained nomadic became weaker with the growth of the number of permanent settlers. Other nomads then profited by this weakness and displaced the occupants of the steppes bordering on the civilized countries; these peoples were thus forced to complete the migration toward the sedentary countries or to amalgamate with the newcomers.

The sedentary peoples of the Old World were concentrated in ancient times on the shores of the North, Baltic and Mediterranean seas and the Atlantic, Indian and Pacific oceans. This left unsettled an immense area covering a large part of continental Europe and Asia and forming a continuous stretch of land which facilitated migrations. The mountain chains that interrupt this stretch could be crossed through passes or in the case of the Ural Mountains through large depressions—those of the Caspian and Aral seas on the one hand and the passes of Ekaterinburg on the other. The nomads surged from the borders of China to the Danube and the Rhine, propagating customs, ideas and art forms.

The history of the nomads of the Russian and Asiatic steppes is known from the end of the third century B.C. At that time there emerged in Mongolia a confederation of peoples, probably of Turkish origin, whom the Chinese classed under the general name of Hsiung-nu. These peoples advanced toward the southeast, southwest and west, driving before them in the direction of China, Syr-Darya and the Ural Mountains those nomads whom they encountered—the Yuechi of Kansu, the Saka of western Turkestan and the Sarmatians of the west Siberian plains. The last, apparently related to the Iranians, invaded the Russian steppes in the second century B.C., displacing the Scythians, who had come from Asia and had for a long time been developing from nomadism to a partially sedentary life on the borders of Greek territories. The Sarmatians then moved toward the Greek borders, where their vanguard entered into contact with Greek civilization and incorporated certain of its aspects with their borrowings from sedentary Iranians. In the same century the Saka were driven to Seistan, south of Afghanistan, while the Yuechi were forced to withdraw to Sogdiana and Bactria. The Saka continued their migrations in the first century B.C. as far as Baluchistan, the mouth of the Indus and the Gujarat peninsula; the Yuechi, driving the Saka before them, advanced as far as Afghanistan and Seistan. Both peoples amalgamated with the tribes whom they conquered and thus passed from a nomadic to a sedentary life.

Other nomads emerged from the shores of the Baltic—the Cimbri, who were either Germans or Celts, and later the Teutons, who in the last years of the second century B.C. twice penetrated into Roman territory. During the first century B.C. numerous Germanic tribes from southern Scandinavia and from the southern coasts of the Baltic gradually reached the neighborhood of the Rhine, the Danube and the Prut. While this progressive migration of Germanic tribes toward the southwest, south and southeast was taking place the Hsiung-nu in the Far East began to feel the pressure of other northern nomads—

the Mongols (among whom were the Sien-pi) and the Tungus. The Hsiung-nu were forced to move toward China and the Russian steppes, where the Sarmatians found themselves caught between the vanguards of the Hsiung-nu and the Goths, who had come from the northwest. In the third century A.D. China was invaded by the Hsiung-nu. In the first half of the following century the wave of the Mongolian Juan-Juan spread over China, while the Germanic nomads began to migrate in larger numbers toward the Roman Empire, the frontiers of which started to break down. In the second half of the same century the Hsiung-nu of Mongolia were no longer able to resist the pressure of the Juan-Juan and consequently many migrated toward the far west of Mongolia. After violent struggles they emerged beyond the Altai Mountains in the steppes extending to the north of Lake Balkhash and the Aral Sea, whence they moved about the year 355 toward the Volga.

The continued migration of these Hsiung-nu, whom the westerners called Huns, had important repercussions in Europe. On the one hand, the Ostrogoths and Visigoths were forced to move from southwestern Russia toward the inner regions of the Roman Empire. On the other hand, the last of the Sarmatian people—the Alani—were driven toward the Tisa valley and then toward Germany, where they displaced many of the Germanic nomads who had preceded them, especially the Vandals and the Suevians. In 406 this group of Alani and Germans finally reached and crossed the Rhine. Their migrations continued throughout Gaul and extended to Spain. The Visigoths, who had advanced through Moesia and northern Italy as far as northern Gaul, met the Vandals a few years later south of the Pyrenees and finally drove most of them from the Iberian Peninsula toward north Africa, where they moved toward Tunis. Meanwhile the Ostrogoths, who followed the Visigoths, settled in Italy. Other Germanic tribes, such as the Franks, Burgundians and Alemanni, established themselves in Gaul and its vicinity. The Huns, who followed the Danube Germans, finally reached the country which at a later period became Hungary, whence they tried without success to push their migration farther. The migrations of the Huns ended in 453 with the death of their chief Attila after their great campaign into Gaul and Italy.

During the fifth century Asia continued to witness great displacements of peoples. With the retirement of the Huns toward the West the Juan-Juan extended their sway over all central Asia, driving the Ephthalites, sometimes called the White Huns, who were probably of Mongolian origin, toward the southwest into Afghanistan and India, where they finally settled toward the end of the fifth century and in the sixth after having ravaged the region. The Tu-kine, who were Turkish nomads, supplanted the Juan-Juan in central Asia in the middle of the sixth century, conquered the nomads who had preceded them and drove out the recalcitrant tribes, notably the Avar group. The latter withdrew toward the Ural Mountains and the Volga, whence they reached the Danube and the Tisa plain, displacing there the last of the Huns and driving toward Italy the Germanic Lombards, who settled to the south of the Alps.

For a time equilibrium seems to have been attained in central Asia. The Chinese Empire had become strong under the Han dynasty; the numerous nomadic tribes which had come from central and northern Asia were torn by inner dissensions, such as invariably occur as soon as opportunities for conquests and raids disappear. The West would have been spared new migrations had not the decadence of the Persian and Byzantine empires offered to the Semitic nomads of Arabia an opportunity for a great migration. United by Mohammed the Arabs in the seventh century and in the first half of the eighth spread like a tidal wave over Syria, Persia, Egypt, Asia Minor, Armenia, the whole of north Africa and Spain; they penetrated into Gaul, invaded Afghanistan, Bactria, Sogdiana, Ferghana, reached the neighborhood of Chinese Turkestan, penetrated into India and later conquered Sicily. Among other peoples carried along by the stream of the Arab migrations were the Berbers, who formed the core of the Moslem population in Spain.

The Arab penetration into Asia north of Sry-Darya and the Arab victory on the banks of the Talas in 751 had far reaching results. They contributed to the ruin of Chinese prestige and to the collapse of the reigning dynasty; they offered the nomads of central Asia an occasion for attacking the frontiers and finally for settling upon the territory of China. A group of these nomads, the Khitan, acquired control of Peking. As a result of the Arab victory some of the nomads of western Asia had to withdraw toward Europe; about the middle of the ninth century the Magyars crossed the Ural Mountains, spread over eastern Russia and reached the shores of the Sea of Azov, whence they were soon displaced by

other Asiatic tribes, the Petchenegs. The Hungarians subsequently reached the Danube and the Tisa, conquered the descendants of the ancient Avars and ravaged western Europe until their defeat on the Lech by Otto the Great in 955, after which they gradually settled in what is now Hungary.

When the Sung dynasty in China became powerful the nomads who remained in central Asia were forced to move westward. A group of Turks was thus driven toward the Ural Mountains and the Volga; another under the leadership of the Seljuk family migrated toward the Iranian territories of the Near East. The hordes of Seljuk Turks overran Khurasan, Persia and Armenia, submerged the Byzantines at Manzikert (1071) and filled Anatolia and Syria.

As a result of a realignment in the thirteenth century of the nomadic tribes of central Asia, a group of Manchus, the Juchen, began to attain dominance in China, while the Mongolian tribes, which up to that time had been wandering over the mountainous region between Lake Baikal and the upper valleys of the Onon and the Kerulen, became in the thirteenth century under the leadership of Genghis Khan the masters of all Mongolia and conquered northern China, eastern Turkestan, Afghanistan, Persia, Russia, a large part of eastern Europe, Asia Minor, Mesopotamia, Syria and finally southern China. Although the year 1280 marked the close of the era of their great conquests, migrations of the peoples of central Asia continued. The Ottoman Turks, driven out of Khurasan at the beginning of the thirteenth century by this Mongolian invasion, a century later reached Asia Minor, whence they migrated to the Balkan Peninsula. The capture of Constantinople in 1453, which was merely the last act of their gradual conquest of the whole ancient Byzantine Empire and of the Balkan Peninsula, was followed by their expansion toward Hungary and the Adriatic.

Apart from colonizing movements the only great maritime migrations which occurred during this period were those of the Germanic tribes into Great Britain and those of the Scandinavians. The maritime tribes of northwestern Germany, the Angles, Saxons and Jutes, attempted during the fifth and sixth centuries to conquer the soil of Great Britain. The Scandinavian migrations were at first merely a continuation of the Germanic migrations. Starting, at least for the most part, from Scandinavia the Germanic tribes crossed the Baltic and spread gradually over Germany, whence many of their number migrated to the Roman Empire. Those who remained in Scandinavia—the Danes, Norwegians and Swedes—gradually advanced toward the southern part of the peninsula. The Danes then crossed the straits which separated them from the Jutland peninsula and from there reached the Eider at the beginning of the sixth century. Beginning with the seventh century the Norwegians migrated westward to the Shetland and the Orkney Islands and in the eighth century to the Faroe Islands and the Hebrides; they also pillaged the coasts of Scotland and Ireland. The Swedes moved toward the Gulf of Riga and the Gulf of Finland, whence a part of them, the Varangians, continued their migration toward the Dnieper valley. In the ninth century these migrations assumed wide proportions. The Norwegians settled in Ireland, the Danes in England; both groups also migrated to the Seine basin and to Normandy—a country which the Normans, "men from the north," finally obtained by the treaty of Saint-Clair-sur-Epte negotiated in 911. Between 860 and 870 the Norwegians invaded Iceland; in the tenth century they penetrated Scotland and before 1000 they reached Greenland, whence they undoubtedly reached America, without, however, settling there. At the end of the tenth and at the beginning of the eleventh century England was invaded again by the Danes, who colonized it under Canute.

It has been maintained that the Vikings were sons of large families who were compelled to leave their homes because the soil of Scandinavia was not sufficiently fruitful to sustain them. Their migrations have thus been interpreted as the emigration of the excess population; this explanation is unsatisfactory for mass migrations, especially nomadic migrations, which are to be understood in terms of the prospect of conquest and settlement offered to impecunious peoples by countries which are too weak to resist invasions. The theory may, however, explain limited migrations; for example, many Normans who marched to southern Italy with Robert Guiscard were the younger sons of families who had no prospects at home, and the same was true of many knights who marched with the crusaders to Syria.

The question of the numerical importance of the migrations is in many instances insoluble. Some authorities maintain that certain provinces of the Roman Empire, particularly Gaul, attracted Germanic invaders in masses sufficiently large to modify the ethnic composition of these

regions. Others assert that these tribes at once amalgamated with the native population and that they became the masters of the invaded countries despite their small numbers only because they had force at their disposal. The fact that the Germans adopted the language of the people whom they conquered cannot be taken as a proof of the small number of the invaders; nor can the fact that the Arabs imposed their language on their subject peoples be considered to prove the large number of the former.

The problem is all the more complex since migrating populations seldom involve pure ethnic groups. The Arabs carried along with them in their migrations tribes which had nothing in common with the people of Arabia. Similarly, other nomads of central Asia migrated with the Huns; the same holds true of the Turks and the Mongols. Thus the problem of race mixtures resulting from migrations is extremely complicated. The Scandinavian type can still be easily recognized in Normandy and the Mongolian type in Russia, but in general the ethnic elements are so thoroughly intermixed that the ablest ethnologist cannot separate them. Race mixture, always a gradual process, is sometimes delayed by the policies of the conquering peoples. Thus during the reign of the caliph Omar (634-44) and later under the Ommiad caliphs the Arabs lived as masters in the countries which they subjected to military occupation. Far from the cities of the natives the Arabs of the annexed provinces founded military settlements, such as Al Kufa and Basra in Iraq and Fustat in Egypt, to which they transferred the Arab families, forbidding them to mix with the inhabitants of the conquered country, who were heavily taxed. The Abbasside revolution in the middle of the eighth century did away with this subjection but did not accelerate the fusion of the races. The result of the Arab migration consisted therefore in a unification of religion, language and culture rather than in race mixture.

There have been prolonged discussions concerning the social and political transformations caused by migrations. Some authorities maintain that after the Germanic invasions the life of the conquered people continued to go on in the same way as before the conquest and that the only change experienced by them was a change of masters. It is true that the Germans at first carefully avoided all interference with the Roman machinery of administration, whose equivalent they had not possessed; that old taxes continued, as far as possible, to be collected by Roman fiscal employees under the supervision of the new masters, who appropriated the collections; that the Germans long permitted the continued operation of the Roman codes. But the invaders refused either to adopt these codes or to apply them to cases in which Germans came into conflict with people who were under the jurisdiction of the Roman law; consequently Germanic codes gained ground and society was gradually transformed.

LOUIS HALPHEN

MODERN. Migrations in modern times have assumed new forms. They have tended to be less predominantly movements of groups and more the movements of individuals seeking economic settlement or transient work in other lands. Modern migrations have been largely controlled by governmental policy; freedom of migration, first generally recognized in the nineteenth century, has again been largely circumscribed in the post-war period in the interest of national policy. The oversea discoveries from the fifteenth to the seventeenth centuries and the development of colonies in the New World added to the traditional continental movements important intercontinental migrations. In addition the modern period, especially since the rise of industrialism, has witnessed the development on an unprecedented scale of intranational movements of workers, principally from rural to urban centers and from one economic center or region to another in the same country.

Intercontinental Migrations. Colonizing activities by European countries exhibited certain common characteristics but also many important variations in character, motive, number and composition. European governments, guided by mercantilist conceptions, did not encourage migration. The dangers of travel and the difficult conditions to be encountered overseas created psychological barriers to migration which were overcome only by the most oppressed and persecuted groups. The character of migration from European countries was ultimately determined by the conditions which developed in the colonies. Every colonizing group sought to transplant its culture to its oversea settlements. This policy succeeded in those territories which were sparsely populated and where the natives stood on a low level of civilization, as in America north of Mexico, or where the native population was dying out at the time of settlement, as in Australia and New Zealand; it was less successful where, as in Central and South America, the

native population was more dense and had already attained an agricultural civilization and a well organized political society and city life. These states were destroyed by the conquerors, and the ruling classes were displaced by a new group, most of whom were the offspring of intermarriages of the immigrants with the native population. In the eastern Asiatic colonies, where the native population possessed a high degree of culture, the conquerors had to confine their activities to the supervision of the ruling classes without interfering with the cultural and economic conditions of the native population; consequently no mass migrations to these regions could take place. The white conquerors and immigrants were confronted with unusual difficulties whenever, as was the case in northern and southern Africa, a dense native population gradually became aware of its racial unity, accepted western civilization and used it to combat the supremacy of the invaders or where immigrants of a foreign European nation had to be attracted because of the shortage of labor in the native country; rivalries were provoked which were only rarely and gradually displaced by a new political solidarity.

The colonial policies of most of the European nations were directed primarily to the conquest of countries rich in rare spices, pearls and especially in precious metals. Originally the Spanish kings attempted also the agricultural colonization of the West Indies; Columbus, for example, partly financed by means of royal subvention, took on his voyages farmers, domestic animals and seed. After the conquest of the rich gold and silver fields, however, agricultural settlement was neglected, particularly since the population of the mother country was insufficient and unprepared for large scale colonization, and the immigration was oriented toward Mexico and Peru. Immigration was confined to a limited number of individuals who were obliged to take an oath of allegiance to the king and the Catholic church. For a long time these immigrants were brought overseas only for specified brief periods; later immigrants were generally not allowed to return to the mother country. Non-Spanish immigrants and particularly heretics were allowed to enter the colonies only by special permission and were constantly subjected to intolerable restrictions. An attempt was made to prevent the creation of any independent colonial community whose local interests might possibly come into conflict with the financial interests of the Spanish monarch.

The greatest obstacle in the way of an intensive colonization by Europeans was presented by the demographic and economic conditions of the mother countries. The population of Spain before 1492 totaled approximately 9,000,000; by 1694 the population had shrunk to less than 6,000,000, partly because of the expulsion of the Jews and of the Moors. Although the Cortes complained about the excessive emigration to the colonies, actually this played an insignificant role. In the archives of Seville, the only authorized port of embarkation at the time, the number of records of emigrants to the colonies between 1509 and 1790 totals about 150,000; the documentary material for a number of years is, however, incomplete or missing. Pereyra has estimated the annual number during the sixteenth century to be 15,000, but this figure appears to be excessive for the period before the discovery of Peru. Benzoni's estimate that the number of white colonists in Spanish America in 1550 was not more than 15,000 seems to be probable in view of the great mortality of emigrants en route and among the settlers. According to Velasco the Spanish conquests between 1492 and 1542 were accomplished by not more than 80,000 men under the direction of 2000 leaders. A statistical report of the Council of the Indies dated 1570 estimates that there were then in Spanish America 32,000 Spanish households and 4000 large feudal estates. Besides the feudal landowners 10 percent of the immigrants were priests and the rest rural colonists, artisans, miners and soldiers and a few artists, physicians and lawyers. There were many déclassés and adventurers of the upper and middle classes as well as convicts and military deserters who had had the choice between going to prison or to the colonies or who had been sentenced to deportation. As late as 1728 the colonization of Brazil was connected with the discovery of gold fields.

Portugal, which had conquered and settled the Canary Islands in 1404 and had engaged in colonizing work in Brazil, discovered in 1500, had in other countries merely established administrative offices. In 1580 Portugal was united with Spain; when after sixty years these countries separated, Holland, Great Britain and France had become great colonial powers and had destroyed the Portuguese empire. These powers recognized the right of Spain and Portugal only to those colonies which they had actually settled. They proclaimed the principle of *mare liberum* in opposition to that of trade monopoly. Holland with its colony on the Hud-

son from 1610 to 1674, Sweden with its settlement on Delaware Bay from 1637 to 1655 and France in Canada and Louisiana were able to bring to America only relatively few settlers. In 1763 there were only approximately 60,000 Frenchmen in North America.

In Great Britain radical changes in agricultural organization and technique and the spread of enclosures created in the sixteenth, seventeenth and eighteenth centuries a surplus of rural population, a part of which was forced to emigrate. As the only colonial power which could supply a large number of immigrants qualified to establish productive settlements Great Britain eventually acquired control of all North American colonies and the greater part of the Spanish Antilles. The British government was interested in securing raw materials, particularly wood, which were necessary for the home industries. Three important groups of British settlements were established on the Atlantic coast in the seventeenth century: Virginia and Maryland, the New England colonies and settlements on several islands in the West Indies. Large tracts of land were granted by the crown to titled landowners and chartered companies and colonies were established by these grantees. Some of the settlements later received independent charters from the home government. It is estimated that at the peak of emigration during the seventeenth century about 10,000 persons left the British Isles annually.

The history of the Virginia colony begins in 1607 with the settlement of 105 Englishmen by the London Company. The immigration was at first meager. The scarcity of workers for tobacco raising led to the recruiting of indentured labor; between 1635 and 1705 from 100,000 to 140,000 indentured servants were brought to Virginia, but the number in actual service at any particular time probably never exceeded 10,000. After reimbursing their masters for the cost of passage indentured servants generally succeeded in obtaining cheap land and establishing themselves as free agriculturists. Another group of free landowners was recruited from English peasants who paid their own passage in advance. Similar conditions obtained in the Catholic colony, Maryland, which was established in 1634 and where by 1671 the population totaled between 15,000 and 20,000 persons. During the second quarter of the seventeenth century discontented Catholics turned to the West Indies which had been taken by England from Spain, and which were granted by the crown to the earl of Carlisle, a Catholic convert; 50,000 persons settled in Barbados between 1627 and 1647.

In the New England colonies the first successful settlement, New Plymouth, was founded in 1620 by the Puritans who arrived on the *Mayflower*, numbering only 102 persons, including children. The territory of the Massachusetts Bay Company, which received a charter in 1629, became the chief goal of the migration of the English dissenters seeking to escape the political absolutism of Charles I and the religious absolutism of Archbishop Laud. Similar motives led to the founding of Connecticut in 1633, Rhode Island in 1636 and New Haven in 1638. Many of the first Puritans who came to America with the intention of engaging in agriculture became fishermen, shipbuilders and traders. With the economic development of the colonies they began to attract not only discontented gentlemen, ministers and small landowners but also artisans, laborers, fishermen and sailors. These colonists maintained fewer indentured servants than did those in Virginia; the few that were brought to New England were employed chiefly as domestic servants. At least 20,000 Englishmen had migrated to the New England colonies by about 1640. It has recently been estimated that the population increased through immigration from about 28,000 in 1640 to about 85,000 in 1660 and 275,000 in 1700.

Emigration from the British Isles declined after the Restoration as a result of improved conditions at home and because of the effects of the navigation acts upon the colonies. A return movement set in; thus 607 persons left Barbados in 1678–79. The closing of continental markets to direct American exports of tobacco by the second half of the seventeenth century ruined the small planters in the tobacco colonies; only the large planters with their Negro slaves (extensively used after 1680) were able to cope with the unfavorable conditions. The indentured servants, who no longer had the opportunity of becoming economically independent, as well as the small immigrant landowners migrated to the newly established northern agricultural colonies, Pennsylvania, Delaware and New Jersey, a movement which lasted fifty years. French Huguenots and English, German and Swiss immigrants also settled in the plantation colony of Carolina.

The number of emigrants from the British Isles to the New World totaled probably about 500,000 in the seventeenth century and 1,500,000 in the eighteenth. In the course of the voyage

and directly subsequent to it the rate of mortality was at least 15 percent. The proportion of women emigrants to men from Scotland was one third in 1774, while according to the London statistics of 1635 it was only one sixth. Because of the high mortality and the effect of the scarcity of women on the marriage rate the natural increase of the population was relatively small and large numbers of new immigrants were necessary to supply the labor needs of the colonies. In the eighteenth century the British government endeavored to remedy the increasing shortage of labor by a liberal policy toward immigrants from continental Europe; in addition in 1717 it passed a law over the protests of the colonists which resulted in the transportation to the southern colonies of 50,000 criminals by 1776. As the British conquered new territories they tried to induce discharged officers and soldiers to settle by offering them special privileges; thus when the fortified harbor of Halifax was created in 1749 there were established there about 2500 colonists of whom the greater part were dismissed soldiers.

The great migratory movement of the century was that of the Presbyterian Scotch-Irish from Ulster, 4200 of whom emigrated to America in 1718 because of economic, political and religious discontent. After the famine of 1740 the average annual number of these immigrants rose to 12,000; in the course of the next fifty years their number totaled half a million. There were also several waves of English and Scotch emigration due to economic distress, but Irish Catholics began to settle in the United States and Newfoundland in considerable numbers only toward the end of the century. This type of emigration assumed its largest proportions between 1763 and 1775 as a result of the transformations taking place in Scotch agriculture and the extreme poverty in Ireland. According to the incomplete emigration lists found in the Public Record Office 3746 persons emigrated from England to North America and 370 to the West Indies in 1774, while the number of people who left Scotland during that year for North America was 1185 and for the West Indies 68. According to other sources the Scotch-Irish emigration from Ulster to America between 1769 and 1774 was 8700 annually. Since the number of illegal emigrants must have been no less than 5000, the total number of the emigrants from the British Isles averaged annually during this period about 20,000. Mass migrations, which were often stimulated by unscrupulous agents, led the government to resort to police and fiscal measures in order to prevent depopulation; for example, orders were issued to the Scottish customs houses to forbid the loading of ships with passengers beyond average capacity. After the American Revolution the United States prohibited the importation of convicts and encouraged immigration; one of the colonists' grievances, as stated in the Declaration of Independence, had been that the English king had tried to interfere with immigration and with the settlement and the naturalization of the colonists in America.

After the Peace of Paris in 1763 British emigration, particularly from Scotland, was directed mainly to Canada and Cape Breton. Between 1783 and 1784 approximately 24,000 English loyalists emigrated from the United States to Canada, especially to Nova Scotia and New Brunswick, where they were given free land, as were the soldiers who had taken part in the wars between England and France in North America. These loyalists, augmented by others who emigrated into Canada in later years until they totaled about 40,000, influenced the political organization of that colony and created a broad basis for later emigration. On the other hand, from 6000 to 8000 Frenchmen in Canada who declined to take the oath of allegiance were deported in 1755 to the southern British colonies.

Individual Germans who had emigrated to Virginia beginning in 1608, to New Amsterdam beginning in 1623 and to the Swedish colonies beginning in 1637 were followed in the last decades of the seventeenth century by organized groups of settlers. The emigration of Germans and German Swiss to America mounted in the eighteenth century, while the emigration from France and Holland and other countries remained negligible and German emigration to other than British colonies was insignificant. After the poor harvests of 1708 and 1709 in Germany the first extensive emigration movement occurred from the Palatinate and the Rhineland. Encouraged by the British government, which paid their traveling expenses, 13,000 to 15,000 of these emigrants landed in England en route to America; because of lack of transportation facilities the majority were forced to remain in improvised camps in London, where between 4000 and 5000 perished, and only about 3000 could be transported to New York; those who arrived in New York were soon obliged to migrate to Pennsylvania because of the hostile treatment accorded them by Governor Hunter. In 1693, 600 Swiss Palatinates

emigrated to Carolina and, in 1710, 5000 Swiss emigrated to North America. The Quaker William Penn, to whom the British crown had granted a large domain in 1682, persuaded Quakers in western Germany to send groups of emigrants to Pennsylvania; because it offered religious, economic and political freedom this colony remained during the eighteenth century the chief center of settlement for the German immigrants, including many Mennonites, who numbered there between 6000 and 7000 in 1719, Schwenckfeldians, who first came in 1734, and Herrnhuter, who began to come in 1740. Poll taxes levied on immigrants in Pennsylvania in 1729 were revoked when the immigrants began increasingly to settle in New Jersey and in the Carolinas. Incomplete data obtained from the city records of Philadelphia reveal that about 70,000 Germans and a small number of Swiss, Dutch, French and other nationals entered there between 1727 and 1775. The immigration of poor Germans was furthered by agents and by captains, especially of Dutch ships, who granted loans to cover transportation expenses; the redemptioners who failed to repay the loan shortly after landing could be sold in the open market for a period of three or four years. The number of Germans in 1750 in Pennsylvania totaled about 80,000. German emigrants, mainly Protestants, from the Palatinate, the upper Rhine and Württemberg, had their passage paid to Nova Scotia by the British government; in 1767 of the 13,374 inhabitants of that colony 1946 were aliens, mostly Germans. According to the emigration archives of the French Colonial Ministry the latter also settled in large numbers in the French colonies; 528 were transplanted to Louisiana between 1720 and 1721, and 5000 to 6000 to Cayenne in 1763–64. German intercontinental emigration from the beginning of colonization until the nineteenth century is estimated by Mönckmeier to have totaled about 200,000.

Emigration from Europe to the American continent would have assumed quite different proportions had the slave trade been prohibited or restricted from the beginning. Negro slaves were imported early in the colonial period for hard labor in mines and on tropical plantations. Columbus is said to have brought Negro slaves from the west coast of Africa. In 1517 Spain declared the slave trade a state monopoly, but since it had no colonies in Africa it merely controlled the importation of slaves to America.

The most important of the foreign asientos (*q.v.*) was that granted to Great Britain by the Treaty of Utrecht in 1713 on the basis of which the British South Sea Company obtained the right to deliver 4800 slaves annually over a period of thirty years to the Spanish West Indies; since this number was insufficient for the needs of America, there developed an illicit slave trade on a large scale. The slaves were brutally treated during transportation and in the course of their labor. The rate of mortality during the journey was enormous at all times and their natural increase was small because of the conditions under which they lived and the small number of women among them; the demand for new slave shipments was therefore continuous and large. Between 1680 and 1786 about 2,130,000 Negroes were brought to North America and to the British West Indies. The total number of Negroes imported annually toward the end of the eighteenth century by England, France, Holland, Denmark and Portugal totaled approximately 100,000. The peak of the Negro slave trade was reached at the end of the eighteenth century and the beginning of the nineteenth, the period after the introduction of the cotton gin; according to the statistics of the port of Havana about 225,000 Negroes were landed between 1790 and 1820. In Brazil as late as 1840 slaves, mostly of African origin, were landed by forty-five vessels, each with a capacity of between 300 and 400 persons. It is probable that in the course of the three and a half centuries preceding 1888 there were brought from Africa about 20,000,000 Negroes, most of whom were imported to the tropical and subtropical colonies.

Modern mass migration, a voluntary movement of free wage earners, tenants and small farmers, began in Great Britain with the industrial revolution in the second half of the eighteenth century and lasted until the World War. The early part of this period, preceding 1850, must be distinguished from the later part, which was marked by revolutionary changes in transportation and by the rapid technical development of large scale industry. The Napoleonic wars and the economic crisis at the beginning of the nineteenth century tremendously increased the intercontinental migrations until they surpassed in extent the continental migrations which had predominated in Europe until 1820. During the entire century these migrations helped to solve the problems of unemployment and overpopulation and at the same time functioned as a political safety valve.

In the first half of the nineteenth century con-

ditions in the countries of both emigration and immigration were extremely favorable for an increase of the number of immigrants. Emigration was necessitated by the miserable plight of the urban masses following the industrial revolution and by the desperate condition of the rural surplus population, aggravated by agricultural crises; it was encouraged by the extension of the settlements in the United States beyond the Appalachian range and the rapid development of industry, which required free labor. From 1870 to 1890 free or cheap land gave the proletarian immigrant of farm origin some assurance against the insecurity of cyclical unemployment in industry; and cheap passage due to improved ocean transportation made it easier for the emigrant to return to his native country in times of crisis. Next to the United States British colonial possessions attracted the largest number of immigrants; the territories which remained in the hands of the other colonial powers had no particular importance from the point of view of migration until the middle of the century.

Public regulation of emigration and immigration was more lax during this century than ever before, largely because the governments found the spontaneous migratory movements to be in accord with national interests as they conceived them. A species of police licensing of individual emigrants which prevailed in Europe until the middle of the century was gradually abandoned because of its ineffectiveness. The European countries transported a great number of convicts and paupers to the colonies; between 1787 and 1867, 160,663 convicts were shipped to Australia from the British Isles; until 1840 in fact the number of convicts sent to Australia exceeded the number of free immigrants. In periods of crises Great Britain, Germany, Switzerland and Sweden subsidized the emigration of unemployed, paupers and vagrants. From 1819 to 1827 the British government made five appropriations for the support of emigration and by the Poor Law Amendment Act of 1834 local bodies were permitted to provide financial assistance for emigration, a power which was used extensively especially during the potato famine of 1846–47. The countries of immigration, on the other hand, did not as a rule subsidize immigration although they placed their natural resources at the disposal of the immigrants; some South American countries, however, paid the transportation expenses of the settlers (*see* EMIGRATION; IMMIGRATION).

According to American authorities immigration to the United States between 1790 and 1820 totaled approximately 250,000, a figure which appears to be excessive. Emigration to the United States from the British Isles was extensive even during the Napoleonic wars; but mass emigration from continental Europe, largely from Germany, did not begin until 1816, when it amounted to from 15,000 to 20,000. In the following years there were relatively good harvests in Europe and a new emigration movement from the continent did not develop until 1828. The emigration from the British Isles at this time fluctuated in accordance with changes in economic conditions; in 1832 for the first time it exceeded 100,000 persons. Before 1850 the United States received about one half of the emigrants of Great Britain and in a few years approximately two thirds. Between 1820 and 1840 on the average about 20,000 British emigrants went to Canada annually, and large numbers also emigrated to Australia and south Africa. The period from 1830 to 1850 was characterized by one of the greatest mass migrations. In Great Britain the poverty among the farmers and the mechanization of the textile industry provoked emigrations. Of the total emigration of 300,000 from the British Isles in 1849, 219,000 came from Ireland largely because of the potato famine of 1846–47. At least 2000 German soldiers and 5000 German colonists migrated within several years to Brazil, but in 1859 German immigration was prohibited by that country. In 1854 German emigration reached 240,000, of which 215,000 went to the United States. The discovery of gold in California increased emigration from France and the Scandinavian countries; some Swiss and Italians were also among the immigrants of this period. Spain restricted emigration to America until 1850. Emigration from the Latin countries to north Africa, particularly to Algeria, began in 1830.

Between 1776 and 1840 approximately 1,000,000 immigrants arrived in the United States and 9,500,000 from 1840 to 1880, of which about 90 percent came from Europe. After 1880 immigration increased to immense proportions until the World War. Between 1850 and 1914 the attraction exercised by the oversea countries was the decisive factor in determining the extent of immigration. In the United States the poor harvest of 1854, the economic crisis of 1857 and the Civil War brought about a decline in immigration, which later increased considerably as a result of the homestead laws, the construction of

railroads and the development of large scale industry. Between 1866 and 1870 the average annual emigration from Europe was 346,000; between 1871 and 1875 it was 372,000 and between 1876 and 1880, 283,000. During the three subsequent five-year periods it rose to 686,000, 779,000 and 729,000 respectively.

The period following 1860 marked the beginning of appreciable emigration from southeastern Europe. The growing industrialization of northwestern Europe reduced its importance as a source of labor power not only for the United States but also for South America, Canada, Australia and south Africa, while the constantly expanding westward settlement in the United States provoked an acute crisis in the agricultural southeastern part of Europe in the 1880's. The introduction of compulsory military service, political unrest, the extension of railroads, the improvement in ocean travel and reduction of its cost also contributed to the growth of southeastern European emigration. While in 1880 about 50 percent of the immigrants to the United States from European countries had come from the British Isles and 20 percent from Germany, in the period between 1890 and 1914 two thirds were of southeastern European stock. Between 1896 and 1899 Italy led as an emigration country; in five years between 1900 and 1910 the lead was taken by Austria-Hungary, but Italy resumed her former position in 1911 and from 1913 to 1915. The average annual immigration to the United States from 1901 to 1905 was 764,000; between 1906 and 1910, 949,000; between 1911 and 1915, 805,000; and between 1921 and 1924, 426,000. Many of the new immigrants did not plan permanent settlement; they were rather prompted by the desire to acquire a sum sufficient to purchase a small farm in their native land. Beginning with 1870 countermigration assumed ever increasing proportions, facilitated by the reduced cost of transportation; its extent was determined chiefly by economic conditions in the United States.

After the abolition of slavery in the British colonies the great demand for labor in the tropical and semitropical regions was met to a large extent by the importation of contracted Indian and Chinese coolie laborers, who supplemented the free Negro labor. The intercontinental migration of Indian workers, most of them under three to five-year contracts, reached its peak in 1858, when it totaled approximately 46,000. The French West Indies prohibited this type of indentured migration in 1884 and by 1916 it was prohibited in all British colonies. It declined to a total of only 12,000 in 1912 and 1913 and to only 221 between 1919 and 1920. The recruiting of indentured Chinese laborers for work overseas began in the 1850's; the European powers have since continually ignored the repeated prohibitions of emigration by the Chinese government. Conditions of coolie transportation have been such that the mortality rate during passage has reached 20 percent. Between 1904 and 1910, 170,000 Chinese were brought to the Transvaal to work in the mines, but most of them eventually had to return to China. During the World War 100,000 Chinese coolies were imported by England and 37,000 by France; they too were returned to their native country. The intercontinental emigration of Chinese has stopped almost completely as a result of restrictive laws. While the total number of Chinese abroad, many of them petty merchants, totaled in 1922 about 8,200,000, their number outside of Asia is small: Cuba 90,000, continental United States 60,000, Peru 45,000, Australia 35,000, the Hawaiian Islands 24,000 and Canada 12,000. Japanese emigration, which first began in the 1880's to Hawaii and soon thereafter to the United States, Canada and Australia, was also terminated by restrictive laws in the countries of immigration; Brazil still offers an oversea outlet for Japanese emigrants (*see* ORIENTAL IMMIGRATION).

Laws to curb immigration which were passed in the United States in 1917, 1921 and 1924 reduced the annual number of alien immigrants to 180,000 in 1930. More stringent administrative regulation of immigration was also undertaken by South American countries. In 1922 Great Britain assumed the responsibility of subsidizing by agreements with the dominion governments the colonization of British subjects in its dominions. As a result of this policy, which was designed primarily to make possible the transplantation of agriculturists, 370,000 persons were assisted to emigrate between 1922 and 1930. The British dominions have recently, however, restricted immigration; even Canada has suspended its policy of giving free land to settlers. Immigration to Australia, which had averaged 95,000 annually between 1921 and 1924, shrank in 1931 to 8000.

In recent years of the enormous masses of unemployed workers in Europe only from 250,000 to 300,000 have emigrated overseas annually, whereas in pre-war years the number of inter-

continental emigrants from Europe had totaled more than a million annually. Emigration from Italy, which from 1906 to 1910 had amounted to 402,000 annually, was reduced in 1930 to about 60,000; in Spain, where from 1911 to 1915 the annual average had been 166,000, it was reduced to 50,000. Since 1930 emigration has declined further as a result of general restrictive measures; during 1931–32 the number of alien emigrants from the United States was about 68,000 larger than the number of incoming alien immigrants. In the decade from 1920 to 1930 there was also a considerable exodus of American citizens to European and South American countries, to Asia and to Canada; most of the 520,000 Americans who settled abroad between 1918 and 1930 did so for business reasons and represent the personnel carrying out American economic expansion. In 1931 there began an important emigration of American and European skilled workers to the Soviet Union.

Intercontinental migration throughout the world between 1800 and 1924 totaled approximately 60,000,000, of which 36,000,000 went to the United States between 1820 and 1924; about 10,000,000 of the latter subsequently returned to Europe. According to official immigration statistics the following countries received over 500,000 immigrants:

Country	Period	Immigration (In 1000)
United States	1821–1924	33,188
Argentina	1857–1924	5,486
Canada	1821–1924	4,520
Brazil	1821–1924	3,855
British West Indies	1836–1924	1,477
Cuba	1901–1924	766

According to official emigration statistics the countries which between 1846 and 1924 supplied over 1,000,000 immigrants to oversea territories were:

Country	Emigration (In 1000)
United Kingdom	16,974
Italy	9,474
Austria-Hungary	4,878
Germany	4,533
Spain	4,314
Russia	2,253
Portugal	1,633
Sweden	1,145

Between 1800 and 1930 the population of Europe rose from 180,000,000 to 480,000,000 and the number of persons of European stock in the oversea countries reached 160,000,000.

Continental International Migrations. Continental migrations until the nineteenth century were with few exceptions group rather than individual migrations. Before the fifteenth and sixteenth centuries the migrations were largely the result of agreements between governments which accorded to invited alien groups special political and legal status. During the fifteenth and sixteenth centuries, mass migrations of refugees were provoked by religious and political conflict (*see* Mass Expulsion). The revocation of the Edict of Nantes in 1685 caused the emigration of 250,000 to 300,000 Huguenots from France, largely to other European countries. Those who took part in these continental migrations were chiefly artisans and merchants. The governments vainly issued prohibitions against emigration; the reissuing of bans in 1669, 1685 and 1705 give evidence of the failure of attempts to check the movement. Migration connected with military recruiting assumed importance beginning with the sixteenth century; thus the number of Swiss mercenaries recruited by foreign powers under the authority of military capitulations has been estimated to have been as high as 80,000 in the eighteenth century.

In the seventeenth century Prussian rulers undertook large scale colonization projects for the first time in history. The Great Elector tried to remedy the loss of population caused by the Thirty Years' War through the importation of Dutch, Frisian and Swiss immigrants. The example of Frederick the Great, who colonized approximately 250,000 settlers, was followed by the Hapsburgs, who tried to colonize the devastated regions in Hungary and Galicia by a systematic importation of settlers from Germany, Alsace, Switzerland and Italy. Maria Theresa settled 50,000 between 1765 and 1770, and Joseph II colonized 38,000 from 1783 to 1788. In Hungary the colonization period extended from 1801 to 1840. In 1767 about 6000 persons were illicitly brought from Germany by Colonel Thürriegel to the inhospitable regions of Sierra Morena in Spain. The attempt of Catherine of Russia in 1763 to attract to the Volga regions peasants from southern and middle Germany by offering them favorable conditions was terminated in 1769 when such emigration was prohibited by German authorities. In the preceding six years more than 30,000 had settled in the region, a number which increased to 75,000 by the end of Catherine's reign. A large scale emigration from Germany, in which Mennonites were the first participants, also took place be-

tween 1783 and 1790 to southern regions in European Russia (provinces of Ekaterinoslav, Kherson and Taurida). Emigration from southwestern Germany by way of the Danube to these regions was important from 1804 and was further stimulated by Alexander I's edict of 1808. Later German immigrants settled also in Bessarabia. During the nineteenth century large groups of emigrants left the German settlements on the Volga for other regions of Russia—the Don territory, Crimea, northern Caucasus and Siberia—as well as for the United States and Canada. Emigration of Mennonites from Russia was provoked by the abolition in 1871 of the special status which they had hitherto enjoyed. The movement of German peasants into Poland which started at the beginning of the sixteenth century was impressive from 1809 onward largely as a result of the efforts of Alexander I. Between 1814 and 1830 many German artisans and laborers migrated to newly established industrial cities of Poland. In 1863 there were 260,000 Germans in Russian Poland, and their number was continually increased by immigration throughout the century. By 1867 a large number of skilled workers had emigrated from Germany to Hungary, and there was later emigration to those Balkan states which encouraged industrial development.

Emigration of skilled labor from the advanced European countries to the more backward was followed in the last third of the nineteenth century by the migration of unskilled labor in the opposite direction. In the 1880's there began a migration of seasonal workers from Russia and Galicia to meet the increasing labor needs of German agriculture; from 1910 to 1913 such migrations from Russia totaled yearly, according to Russian data, from 600,000 to 850,000. In 1907 France began to recruit seasonal agricultural laborers on a large scale; by the outbreak of the World War it was importing about 90,000 annually besides 30,000 workers coming daily from Belgium. The migration of Polish miners from Westphalia to the west, which began about the same time, mounted after the war. Beginning in the 1870's Italy supplied Germany and France with a large number of agricultural and industrial workers; until the beginning of the World War these totaled 250,000 annually, one quarter going to Germany and one quarter to France. The emigration to England of Polish and Russian Jews from 1880 to 1910, which represented a movement caused largely by persecutions, appears never to have exceeded 60,000 to 80,000 persons annually, many of whom were in transit to the United States.

The World War turned continental migrations into new channels. Even after the gigantic exchange of population groups among the various states—the return of millions of war prisoners and the repatriation of 9,500,000 refugees, optants and resident aliens—the political boundaries of the old and the newly created states still failed to correspond with the ethnic boundaries. As a direct result of the peace treaties fourteen new states were created in Europe and frontiers increased pronouncedly; consequently what were formerly intranational migrations became in some cases international migrations and vice versa. Customary migrations were restricted for political reasons and by industrial protectionism, which was stimulated in some measure by the increasing cost of unemployment relief and by the agricultural crisis. Agrarian reforms and social legislation tended on the whole to retard the mobility of population; but in some cases, as in certain east European countries, the failure of reforms provided an additional stimulus for emigration. At the same time the countries of immigration in Europe as well as in America restricted the influx of outsiders for nationalist and racial as much as for economic reasons.

The most important immigration countries in Europe during the post-war period were France and Germany. France experienced a rapid economic growth, while its working population had been reduced by the death of 1,363,000 soldiers in the war, by its large number of disabled soldiers and by a low birth rate. It therefore encouraged the immigration of alien workers for permanent residence and naturalization. France has taken the lead in regulating immigration of workers by treaty; the earlier steps in this direction were made during the war, when it had obtained workers from the Allies for the manufacture of munitions and had also engaged a large number of workers from China and north Africa. After the war foreign workers were engaged in several emigration countries through government immigration agencies and international migration treaties were made with Poland, Italy, Czechoslovakia and Belgium. Between 1920 and 1930 France received approximately 1,147,000 foreign industrial workers and 760,000 foreign agricultural workers; about one third to one half of the immigrants were seasonal workers. The number of foreigners in France rose from 1,133,000 in 1911 to 3,300,000 in 1931, when immigration declined to slightly over

100,000 and the number of persons returning to their native countries is estimated to have been 200,000. According to the statistics of the Ministry of Agriculture for 1927 almost one third of the 1,600,000 foreigners gainfully employed in France were Italians; and Poles, Belgians and Spaniards were also numerous. The percentage distribution of the 1929 immigrants by nationality was as follows: Poles 31, Italians 19, Belgians 14, Spaniards 10, Portuguese 7, Czechoslovaks 4.7, Jugoslavs 4.5, Germans 4.5, Russians 1.7; Austrians, Swiss and Greek Armenians were also present in small numbers. While immigration has aided French industry, it has failed to satisfy the agricultural needs of the country; vast areas have remained uncultivated since the war and the yield per hectare has also diminished.

The immigration of alien agricultural workers and of other foreigners to Germany has been drastically limited since 1927. Alien seasonal workers, between 60 and 70 percent of them women, were still employed, although in diminishing numbers, on the sugar plantations and in the cultivation of potatoes. A pact between Germany and Poland in 1927 provided that Polish agricultural workers who arrived in Germany between 1919 and 1925 were to be progressively repatriated. The number of resident alien workers in German industry, which before the World War had totaled from 550,000 to 600,000, had shrunk to 134,000 by 1930. In 1928 and 1929 Germany also concluded special migration treaties with Czechoslovakia, Jugoslavia and Austria.

The problems involved in international migration in Europe during the post-war period were no longer confined to the shifting of labor power from one nation to another. They included such political questions as the right of temporary workers to choose their citizenship and to be instructed in their mother tongue, which questions have constituted the principal issues between the countries of emigration and of immigration and have complicated the problems of the older minorities. For certain countries of central Europe these and other issues were settled by bilateral treaties regulating migration; these treaties have not improved the general situation, however, because they do not usually involve neighboring states and because they often discriminate against third parties. An attempt was made to solve the problem of minorities in the Balkans by an exchange of over 1,125,000 Greeks for 360,000 Turks and of thousands of Greeks for Bulgarians, carried out under the supervision and with the financial assistance of the League of Nations. The latter also directed the migrations, employment and settlement of Russian and Armenian refugees.

After the war continental movements of population in the Americas, in Asia and in Africa became unusually active. The adoption of immigration policies discriminating against Europeans led to an increase in the number of immigrants to the United States from Canada and Mexico as well as from Porto Rico and from the Philippine Islands. The recorded continental immigration from British North America and Mexico, which averaged 62,700 annually from 1908 to 1910, rose to 264,000 by 1923; during this period illegal immigration was also large. Mexican and Canadian immigration, however, shrank to 80,000 in 1929–30 and as a result of the increased stringency of the restrictions it declined further in 1931. According to incomplete statistics Mexican alien immigration dwindled from 40,000 in 1929 to 12,000 in 1930, while the countermigration for these years amounted to 7195 and 6300. Mexicans in the United States, who in 1932 totaled approximately 1,000,000, have been chiefly seasonal workers employed on sugar plantations, on cotton farms and in other agricultural labor. The annual average of Philippine immigration between 1920 and 1929 was from 8000 to 10,000, with a countermigration of about 3000. Little reliable information is available on continental migrations in South America; it is clear, however, that the decline of European immigration stimulated migration from the interior to the economically more advanced coastal regions.

In Asia the chief countries of emigration are China, India and Japan; and the most important immigration countries Manchuria, British Malaya, Ceylon, Indo-China, the Dutch Indies and Siam. While the traditional emigration persists from the three overpopulated provinces of south China to southern Asia, an ever increasing number of agricultural workers, reaching over 1,000,000 in recent years, has been migrating to Manchuria from the three northeastern provinces, particularly from overpopulated Shantung, since 1910. Since 1927 about half of these migratory laborers have remained in Manchuria for permanent settlement. Chinese immigration is also large in British Malaya; according to the statistics of the Straits Settlements it totaled 90,000 in 1881, 278,000 in 1913 and 359,000 in 1927, when the countermigration involved 155,000.

Because of the local economic crisis this immigration has declined since 1929; in 1930 it was partly prohibited. An extensive emigration of Chinese was directed toward Siam and the Dutch East Indies; in 1922 approximately 40,000 persons emigrated to the latter territory. In addition to the Chinese, Indians were the principal immigrants to British Malaya, but Malayans of the Sunda group, Arabians, Armenians and Jews were also included. The number of immigrants from southern India arriving in Penang dwindled from 156,000 in 1927 to 63,000 in 1928; in 1930, 78,000 repatriated. There also took place an important Indian emigration to Ceylon, where the number of immigrants rose from 208,000 in 1926 to 238,000 in 1929.

Japan has not succeeded in stimulating emigration to other Asiatic countries. The number of Japanese abroad in 1928 was only 710,000, of whom 292,000 were in Asia. Japan's plan to settle 1,000,000 colonists in Manchuria between 1908 and 1918 had led by 1923 to the colonization of only 200,000 persons, of whom one half were farmers; it is estimated that during the same period 800,000 Koreans migrated to Manchuria. Of the more than 1,000,000 Korean laborers who entered Japan by way of Fusan between 1917 and 1929 approximately 800,000 returned to Korea. Filipinos have settled in Hawaii since the prohibition of the immigration of Chinese and Japanese; in former years many Portuguese migrated to the islands.

In Africa continental migrations have been extensive. The modern development of industry and agriculture and the construction of public works in certain provinces have required the labor of a large number of natives who are recruited from other provinces by commercial agencies. For a number of years the Witwatersrand Association has been obtaining annually approximately 80,000 temporary laborers from Mozambique and the British colonies for the mines of the Transvaal. The Native Labor Corporation in South Africa imports laborers from Basutoland, whose annual emigration averaged 70,000 between 1920 and 1924, and from Nyasaland and Swaziland. The South Rhodesia Labor Bureau and the Bureau de Travail in the Belgian Congo are also responsible for the migration of thousands. There are likewise population movements between the French colonies of the African west coast, the Spanish islands and adjacent foreign territories. Measures for the protection of the natives enacted after the war by the mandatory powers have influenced the extent and character of African migrations and have resulted in the importation of Chinese workers in some cases.

Intranational Migrations. Population movements to the frontier in the United States were significant intranational migrations. After 1763 Scotch-Irish farmers pushed the frontier beyond the Atlantic coast settlements, so that by about 1800 the Missouri prairies and after the purchase of Louisiana in 1803 the lower Mississippi valley were populated. Even before the gold rush the great western migration had brought to the western territories a larger population than had been attained by the original thirteen colonies in more than a hundred years. The discovery of the gold fields caused the population of California to increase from 92,000 in 1850 to 380,000 in 1860. The gold and silver fields that were discovered later in the west also attracted great numbers of immigrants. Gold miners, the most mobile element in the population, were the first to move to British Columbia and Alaska when new gold fields were discovered. The homestead law furthered the settlement of the western states as did also the ever increasing demand for agricultural products. The last frontier in the west disappeared toward the end of the nineteenth century.

Some migrations within America have been impelled by religious motives. Beginning in 1839, 12,000 to 15,000 Mormons migrated to Illinois and between 1846 and 1851 about 12,000 migrated to Utah. The Mennonites, who founded colonies in New Jersey and Pennsylvania in the seventeenth century, were also often obliged to continue their migrations because of persecutions.

The railroads, the increasing urbanization and industrialization of the United States and the development of boom towns were largely responsible for the shifting movements of the populations. Accurate statistics on the intranational migrations in the United States are not available; it is known, however, that American workers are far more mobile than the European. For many years the agricultural population in the United States decreased from 600,000 to 1,000,000 annually. The seasonal demand for labor in the wheat belt of the middle west, in the fruit growing and truck gardening regions of the Pacific coast and in the cotton belt has caused huge seasonal migrations; the introduction of labor saving machinery, however, has caused a considerable decline in the demand for these workers. The rise of new industries as well

as the shifting location of older industries caused the migration of masses of industrial workers; many cities doubled their populations during the World War and new cities arose. The automobile industry with its fluctuations in employment has stimulated prodigious migrations to the Detroit region. Similar phenomena are also present in the oil industry, in the lumber industry, in the metal mine areas and in the coal mine regions of Pennsylvania and West Virginia.

Since the World War the mobility of the Negroes has become greater than that of the whites. Negro migration from southern to northern states between 1910 and 1920 was five times as extensive as the average decennial Negro migration from 1870 to 1910. Masses of Negroes left the south especially from 1916 to 1918, chiefly for the larger cities in the north. During the depression of 1921 many Negroes drifted back to the south, a large number to return to the north in the succeeding years. The rapid urbanization of the Negroes is evident from the fact that in 1890 only 19.8 percent of the Negro population of the United States lived in the cities while 43.7 percent were city dwellers in 1930. Negroes have also participated in the seasonal migration between the northern and the southern states; Negro migration toward the west and from farm to farm in the south has likewise increased.

Migrations in Europe between farm and city grew immensely after the abolition of serfdom. The number of persons engaged in agriculture in Germany decreased between 1882 and 1925 from over 40 percent of the total number of gainfully employed to 23 percent. The post-war crisis in agriculture further stimulated the migration from rural to urban areas. Between 1924 and 1929 about 894,000 people came from the country to the cities with over 50,000 inhabitants; of this number about 790,000 migrated to the large cities with over 1,000,000 inhabitants. The striking migration to urban centers is revealed in the following percentages, which represent the proportion of those born in certain large cities to the total population of the cities: Bombay, 16 (1921); Paris, 36.6 (1921); Budapest, 38.4 (1925); Berlin, 40.7 (1910); Rio de Janeiro, 52.4 (1920); Vienna, 53.8 (1923); London, 69.4 (1911). The rural exodus assumed such large dimensions between 1920 and 1930 that in some countries certain agricultural regions have been depopulated. This led in France to state subsidized migration of large numbers of farmers from northern to southern regions, in addition to the importation of foreign settlers. The migration from country to city has likewise been significant in Argentina and Canada and in the Union of South Africa.

In numerous countries all over the world, as a result of the economic crisis beginning in 1929, the unemployed have returned by the thousands to their native villages wherever the traditional ties to the land are still strong. In 1930 about 200,000 laborers found work on the land in Germany, and statistics reveal a movement away from the middle and large sized cities for the first time.

Migrations within the Soviet Union have been especially significant because of the social and economic transformations that have taken place. Before the revolution migration to Asiatic Russia from European Russia had been large; between 1801 and 1914 more than 7,000,000 persons had so migrated, many of whom had returned. The vast industrialization projects undertaken by the Soviet Union, especially those since the inception of the Five-Year Plan, have led to great population shifts to urban centers, to newly created cities, to newly established state operated farms (*sovkhoz*) and to colonies set aside by the Soviet government for minority peoples. Following the collectivization of agriculture the movement of the peasants to the cities, which was already large, increased and will probably continue to do so as industrialization progresses.

IMRE FERENCZI

See: EMIGRATION; IMMIGRATION; ORIENTAL IMMIGRATION; NOMADS; DEMOGRAPHY; MAN; POPULATION; ECOLOGY, HUMAN; GEOGRAPHY; CLIMATE; ACCLIMATIZATION; FAMINE; DISASTERS AND DISASTER RELIEF; RACE MIXTURE; AMALGAMATION; RACE CONFLICT; DIFFUSIONISM; ASSIMILATION, SOCIAL; MOBILITY, SOCIAL; ALIEN; ETHNIC COMMUNITIES; DEPORTATION AND EXPULSION OF ALIENS; MASS EXPULSION; NEGRO PROBLEM; SLAVE TRADE; PENAL TRANSPORTATION; IMPERIALISM; CONQUEST; COLONIES; EUROPEANIZATION; ISLAM; DIASPORA; LAND SETTLEMENT; FRONTIER; URBANIZATION; MIGRATORY LABOR; TRANSPORTATION.

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MIGRATORY LABOR. Greenland Eskimo follow the seal northward until the returning cold sends them back to their winter settlement; Swiss peasants drive their cattle to a high alp for the short lived summer pasture; an American hotel keeper moves his whole entourage back and forth between Palm Beach and the White

Mountains. Thus migratory work characterizes cultures of most varied degrees of complexity. "Rogues and vagabonds" also "are ancient blots on the history of mankind." This discussion, however, is confined to those wanderers who travel in search of wage labor; it excludes workers who serve for a term of years under indenture; and it is less concerned with those who swing a single circle of migration, like the tour of the mediaeval journeyman, than with more habitual migrants who go back and forth along somewhat regular paths in response to needs and opportunities that vary with the seasons. Even so the field is a broad one. The three essentials of the system—seasonal variations in the need for man power, a wage economy and workers who can be induced to migrate—are all to be found in most parts of the modern world.

Shortly after 1700 the English harvest, for example, began to draw thousands of laborers each year across the Irish Channel. During the middle of the following century there were certain English villages from which "the gangmaster led out draggled troops of women and children" and a few men "to weed and pick stones and hoe," particularly where newly reclaimed farms were not yet furnished with cottages and needed extra labor for clearing. But these notorious "agricultural gangs" even at their height enrolled only some 10,000 to 15,000 workers and played a less significant part than the "spalpeen" labor from Ireland or the less noticed groups of English workers who tramped into the richer counties "armed with sickles and scythes." On the continent of Europe migratory labor has been of much greater importance and has often involved the crossing of national boundaries. As early as the fifteenth century Polish laborers known as *Sachsengänger* had begun seasonal migration into certain German regions. In the 1880's and 1890's the increasing scale of agriculture in eastern Prussia and the expulsion of some 40,000 Polish settlers intensified the demand for alien migratories. By 1890 they numbered over 17,000; in 1904 there were nearly 140,000 Poles and some 80,000 Galicians; and just before the World War the annual total of seasonai workers entering Germany was estimated as between three and four hundred thousand. Since the war economic conditions and governmental restrictions have lessened the movement and boundary changes have somewhat obscured it; but the quota of foreign migrants to be imported for work on the sugar beet in 1927 still stood as high as 100,000, of whom the majority were women. France also has made use of considerable numbers of alien migratories. Belgians, Spaniards and Italians have for many decades entered the country "for harvest, vintage or beetlifting"; early in the century they were joined by Polish laborers; and, although post-war policy has shifted the emphasis to permanent settlement in mining and industrial as well as agricultural communities, the seasonal movement has continued and found new sources of supply in Czechoslovakia. The occurrence of strikes among woodcutters and *vignerons*, moreover, has called attention to the existence of numbers of native French migratories in many seasonal industries. There has also been extensive use of seasonal labor, often drawn from the proletariat of country villages, in the harvesting of the olive in southern Europe and of the grain crops of Lombardy and the Danube basin.

A still more spectacular current of migration has carried European workers back and forth across the Atlantic to the harvest fields of various parts of Latin America. Between 1907 and 1913 Argentina received some 60,000 workers a year from Italy and Spain; Brazil has taken migratories from Italy, Portugal and other countries; and Spanish seasonal workers have gone in large numbers back and forth to Cuba. Within the Americas a small but interesting group of expert sheepshearers find almost continuous employment by following a path along the backbone of two continents. In Australia and New Zealand also sheepshearing plays a large part in a sequence of outdoor occupations which gives a considerable portion of the laboring population a fairly full year of migratory work.

In South Africa, on the other hand, the native laborers, who do most of the work in the mines and other industries, more often come as successive relays than travel back and forth as true migratories. But the greater part of the 200,000 natives on the Rand mines are hired under nine-month contracts; and employment is markedly seasonal, not because of the needs of the industry but because it is not until the native harvest is nearly consumed that a large proportion of the men can be induced to leave the kraals for the mine compounds. A somewhat similar situation is common in India. Cotton ginning and other strictly seasonal industries employ some 250,000 workers; partly seasonal industries would add half as many more; but even in the remaining factories and in those which have been longest established a considerable number of workers leave for the crop year and many others work

only for one season or for a few years without losing their major connection with the soil. A part of the great migration of both Indian and Chinese workers to Malaysia is seasonal, and it is estimated that for the last fifteen years Manchuria has made annual use of some 200,000 of the Chinese laborers, whom their countrymen describe as the "spring come, autumn go" workers.

Many of these totals are thus considerable, but it nevertheless seems clear that the two greatest regions of migratory labor have been Russia and North America. Before the World War and the revolution the number of Russian peasants "who made periodic journeys away from their villages in search of wagework in agriculture and industry" was possibly 2,000,000 or 3,000,000 in the former category and 3,000,000 or 4,000,000 in the latter. It is said that sometimes two thirds of the population of an entire province would tramp off to seek work in the grain fields of the regions of larger properties and richer harvests; and apparently even greater armies of peasants, mainly men, worked seasonally or for short periods in the factories, the building trades and the coal mines. Indeed Prokopovich's studies of family budgets indicate that some 25 percent of the total income of the peasants of the black soil districts and as much as 40 or 50 percent in less fertile provinces was derived from sources outside their land, in which the earnings of the "factory nomads" and other migratories played an important part. Since the revolution, on the other hand, the redistribution of the land and the absorption of the poorer peasants in the collective farms have reduced this need for dependence upon "going-away work," at the same time that the destruction of the big estates and the limitations on the use of wage labor in agriculture have lessened the opportunities for such employment; and these factors together with the vigorous "campaign against the fluidity of labor" in industry seem to have prevented the reemergence of migratory work on anything like the pre-war scale.

It is apparently North America then which is now the leading field of migratory employment. The grain harvest, beginning in Texas and extending into the Canadian wheat fields, has typically required at least 250,000 transients. Parker estimated in 1915 that California employed no less than 150,000, many of them in fruit picking; between 20,000 and 30,000 do similar work in the middle Atlantic states; and the canneries of the country give brief employment to some 150,000 workers. Most of the 100,000 lumbermen in the Pacific northwest and many elsewhere should be classed as migratories; and the beet fields, the cotton fields, the construction camps and a score of other industries add their quotas to a total army of migrants conservatively estimated at 1,500,000 but often put at a much higher figure. For these diverse tasks labor is drawn from a great variety of sources. Canneries may rely upon the wives and children of wage earners established in the vicinity; beets and cotton and often the fruit and berry picking use family labor, now frequently Mexican, with large proportions of children; and "labor vacationists" from factory or college make brief excursions into the harvest fields. But the most distinctive part of this army has been made up of professional migratories or hobos—men and boys who follow only the transient occupations, whose characteristic mode of travel is the riding of freight trains, who have typically lost all home connections and "lie up" by the thousands for the winter months in the "flophouses" of Chicago and other cities, and who have often faced a "horstyle" world with the ironic defiance so conspicuous in the hobo cant and in the songs of the I.W.W. Since the war several factors have reduced the importance of this group. The use of the combine in the wheat harvest has effected a sharp cut in one of its most characteristic fields of employment. The cheap automobile and the tourist camp have made it easier for somewhat stabler workers and for whole families to reach the transient opportunities. And, finally, the last conspicuous addition to the force of migrants, the Mexicans whose numbers now reach into the hundred thousands, characteristically work and travel not as solos but in family groups. Yet even with these changes it remains true that no country has so many homeless men as the United States or relies on their services for so large a proportion of its labor.

The problems raised by this type of employment show many elements of similarity the world over. Although some workers are attracted to the life by its variety and irresponsibility and other groups have used the seasonal movements as a step toward permanent settlement in a more favored region, the great majority are forced into it by the dearth of stabler alternatives. Many are industrially incompetent or personally maladjusted, often they are strangers in a foreign country; and at best combined action among such shifting groups presents extraordinary dif-

ficulties. It is no wonder then that migratories are rarely able to command satisfactory working conditions. Although there are exceptional cases of relatively high wages, as among the organized shearers of Australia and New Zealand and a fraction of skilled workers among the American "fruit tramps," yearly earnings are characteristically very low; and except in the cases of organized recruiting the periods of enforced idleness are made longer by the time wasted in following misleading rumors of employment. Even more universal are the complaints regarding shelter and sanitation, and such widely separated instances as the provisions for straw mattress and rug in the Prussian contracts of the 1890's and Parker's description of the sanitary conditions of California hop fields in 1913 indicate the difficulty of securing suitable accommodations, which after all are to be used for only short periods in the year.

The social problems are no less conspicuous. If the movement is wholly masculine, as with the African Kaffir and the American hobo, it leads to social and sexual deprivations and abnormalities which are the more serious when, as in the latter case, most of the men have lost all permanent connections. But if, on the other hand, the migration is one of families, as with the Mexicans, it is likely to involve the scarcely more desirable alternatives of excessive child labor and the raising of children under circumstances in which education and a sense of security are almost impossible to attain. Employers also, however dependent they may be upon casual labor, often find it exasperatingly inefficient and undependable. Its discontent moreover frequently breaks out in bitter though ill sustained outbursts of revolt, such as those of the Industrial Workers of the World, and in many countries the wandering laborer has often turned into tramp or "sturdy beggar." For these reasons therefore the more settled elements in the community usually fear and despise the migratories.

It is this last viewpoint that was expressed in the earliest governmental efforts to deal with the problem. Both English and continental history show repeated attempts to abolish vagabondage, and modern vagrancy laws represent something of the same animus. Since the Gangs Act of 1868 and subsequent education laws corrected the worst abuses and prevented the employment of very young children in the English agricultural gangs, many governments have attempted to regulate conditions in the interest of the migrants; California, for example, not only enforces certain standards of housing but also pursues the children of wandering families with special educational provisions. The crossing of frontiers has frequently occasioned state action, and such governmental recruiting as that begun by Prussia early in the century has often been effective in directing the movement and protecting workers from unscrupulous recruiters. Of the international agreements which have become important regulators of continental migration in Europe, those of Germany with Lithuania in 1923, with Poland in 1927, with Czechoslovakia in 1928 and with the Serb-Croat-Slovene Kingdom in the same year, of Austria with Poland in 1922 and with Czechoslovakia in 1925 and of France with Czechoslovakia in 1923 and 1926 make elaborate provisions for seasonal movements. Model contracts are set up to govern the terms of engagement, typically guaranteeing to the workers the same wages as those of natives in the same occupations, equal protection of the labor laws and at least some of the privileges of social insurance; and in each case recruiting and placement are the joint task of government exchanges in the two countries involved.

The argument for the extension of further protection to migratories is a very strong one, especially since there are few cases in which they are likely to repeat the achievement of Australian sheepshearers in building a powerful union on such a shifting foundation. The improvement of the labor market and the planning of sequences of employment are of particular importance. Certainly in the United States no task of greater urgency awaits an effective federal employment service than that of arranging for the guidance and transport of workers in response to seasonal needs. The most complete regulation, however, must leave many of the fundamental problems unsolved as long as migration continues in its present volume. Seasons and crop requirements are stubborn facts; if we did not have our existing supplies of migratories, it is hard to see how we could escape creating new ones. But even if the elimination of migratory labor seems quite impossible, the question may still be asked whether its use might not be greatly diminished either by reduction of the numbers of workers forced into the system or by provision of alternative ways of doing the seasonal work. It is clear that dislocations elsewhere in the economic world are often responsible for pushing redundant supplies of labor

into the migrant class. The depression which began in 1929 has added perhaps 200,000 youth to the American migratories; and occupational obsolescence, whether of feudal retainers or of machine operators, has at many periods forced its victims to join the armies of hobos and vagabonds. Evidently, then, anything which contributed to the permanent stabilization of industry would reduce the danger of these periodic additions to the supply. Moreover, where the need arises from the inability of the "dwarf peasant" to support himself on his own land, solutions have sometimes been found in larger holdings or in improved methods, and in many parts of the world cottage industries have long employed the peasants' winter and provided a significant but diminishing alternative to migration. In this sense, then, both Gandhi's attempt to revive the spinning wheel and the plans of industrialists like Henry Ford to locate factories in rural communities may be regarded as attempts to meet the same problem. Nor is it impossible to look for changes on the side of the demand for labor. Already the introduction of the combine in the wheat harvest has reduced one peak of employment; the mobile tractor columns of Soviet agriculture may be considered as in part a planned substitute for work once done by migrants; and there may be many other cases in which the directors of agriculture and industry could under sufficient pressure arrange, as the slave owner had to, for a year round sequence of tasks.

CARTER GOODRICH

See: CASUAL LABOR; CONTRACT LABOR; INDENTURE; AGRICULTURAL LABOR; MIGRATIONS; INDUSTRIAL WORKERS OF THE WORLD; CANNING INDUSTRY; FRUIT AND VEGETABLE INDUSTRIES; WOOD INDUSTRIES; UNEMPLOYMENT; EMPLOYMENT EXCHANGES; LODGING HOUSES; COMPANY TOWNS.

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MIKHAILOVSKY, NIKOLAI KONSTANTINOVICH (1842–1904), Russian sociologist and publicist. Mikhailovsky, the son of a petty nobleman, studied at a mining school but abandoned engineering for a literary career and became one of the most influential of the radical writers of his period. From 1879 to 1883 he was an active contributor to the illegal organ of the terrorist party, *Narodnaya volya* (People's will), but for the most part he expounded his ideas in the legal press despite the severe censorship. From 1869 to 1884 he was connected with the magazine *Otechestvenniya zapiski* (Memoirs of the fatherland), and from the early 1890's until his death he edited the monthly *Russkoe bogatstvo* (Russian fortune), in which he also ran a department called "Literature and life." Mikhailovsky was primarily an effective publicist, an acute literary critic emphasizing social values and a penetrating analyst of intellectual and social currents; his social philosophy, never presented systematically, is incorporated in his journalistic writings. Yet he is justly regarded as one of the founders of Russian subjective sociology; equally familiar with the natural and the social sciences, he arrived independently at a synthesis closely resembling the system of Lavrov, with whom he is grouped as a philosopher of Russian populism. In the history of Russian thought Mikhailovsky represented a trend toward social idealism away from the extreme materialism of Pisarev and the utilitarianism of Chernishevsky.

Mikhailovsky rejected Spencer's opinion that human society is an organism and criticized the

concept of collective consciousness on the ground that it was a mere metaphor. He believed that only individuals with their thoughts, feelings, volitions, are conscious; that different modes of social organization are determined by the nature of cooperation among men, by social division of labor in the field not only of economic but also of intellectual activity. He contended that there was a movement toward progress in history but regarded the objective method in sociology and objective truth in history as noxious illusions. Truth he defined pragmatically as a "saturation of our cognitive want"; he considered that the function of science was to serve man, to execute his theoretical and practical orders. Sociological research could therefore stop at objective analysis only in exceptional cases; side by side with desire for knowledge appears desire for moral judgment. Mikhailovsky's formula of progress, "the gradual approximation to the greatest possible division of labor between the organs of the individual and the smallest possible division of labor between men," sets as an objective a harmoniously developed individual, who because of technical division of labor can execute all types of work. The socialist ideal he believed would result from the "struggle for individuality." His intense stress on individuality led him to fight energetically against Marxism. Long before Tarde, Mikhailovsky studied the phenomena of suggestion and imitation in animal and human societies and investigated the conditions of the influence of great men on the crowd.

NICHOLAS S. RUSANOV

Works: Complete edition in 10 vols., ed. by E. Kolosov (4th ed. St. Petersburg 1907–14). The only translation available is *Qu'est-ce que le progrès?* (Paris 1897).

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MILITARISM in its broadest sense may be defined as an attitude toward public affairs which conceives war and the preparation for war as the chief instruments of foreign policy and the highest form of public service. Regarding military service as ennobling both the person who serves and his community, it glorifies personal courage, the adventurous spirit, loyalty to a person or cause and bodily strength and endurance. Militarism of this type, rigidly disciplinarian and hierarchic in its methods, thrives in simple or traditionalist groups where only the more primitive forms of excellence and the least developed kinds of authority are understood. It represents the outlook of an "upper" social class which is unaware of its economic dependence and therefore normally implies a disdain of industry, trade and commerce as occupations. It is mythological and religious in its expressions—using ceremonies, decorations, titles and symbols—and is weakest when it is constrained to explain itself. It exists in all armed forces, for it is an essential feature of preparation for war. Defined in such extreme terms militarism is not widely prevalent at the present day, being found only in limited groups or at moments of national crisis. But the traditional idea that war is in "the nature of things" still survives, especially at periods of diplomatic tension, when the masses of the population fall easy victims to the warnings of professional militarist groups. In this more limited sense militarism may be conceived as the spark which sets off the tinder of accumulated ignorance.

The psychological origins of militarism are explained by the survival of types of reaction natural to primitive social conditions. In simple forms of society the frontier of civilized life is the wilderness, the desert or the forest. The civilized community faces inward, but it fears what may be at its back. Against unknown dangers outside, two movements are reasonable—first, defense and, second, adventure pressing forward the gains of civilization over the wilderness. Nearly all the older governments have come into existence as isolated oases of order in a surrounding chaos of emptiness; and therefore the traditional attitude toward what is alien, foreign or outside the frontier is that of defense against barbarism. Anyone who does not speak one's own language or follow one's own customs is regarded as a barbarian; and each of two civilized groups can therefore regard the other as barbaric. Such groups, however, are scarcely in contact so long as the intervening wilderness remains. The ancient Roman Empire and the ancient Chinese Empire were coexistent, but almost in separate worlds. In early times, when

the frontier was a limit to civilized order, military virtues developed—personal courage in defense of a community, obedience to authority and adventurousness in the face of danger.

The primitive attitude toward what lies beyond the frontier survives even in our own time. As civilization advances, however, the frontiers of all of its centers are pushed back until they meet; there is then no more wilderness dividing the jurisdictions of separate governments. But the forms of language, of custom and of social institutions continue to differ, because they have grown outward from diverse centers; and what is really another kind of "order" outside the frontier is treated, by those within it, as barbarism. Defense is then no longer defense of civilization itself but defense of one kind of civilization against another; and the hostile attitude toward what is foreign becomes fiercer, not more reasonable, when what is foreign is no longer obviously weaker. The Germans and the French fear each other much more than the Romans or the Chinese feared the outer barbarians of the past. Militarism emerges when the original source of the military virtues no longer exists. The defense of civilization, instead of dying down when frontiers touch, blazes up higher, as it becomes more artificial. It is assumed that the frontier is still endangered by outer barbarians who are "aggressive," although these so-called barbarians are likewise "civilized" and are armed also chiefly in "self-defense."

War is planned far in advance and many years are spent in preparation for a contest. Under a highly professionalized system of this kind the conception that war is ennobling tends inevitably to give way to the conception that it is inevitable; and the modern militarist usually maintains that his activities are entirely for the sake of peace. The ancient habits are maintained when the original reasons for their existence have disappeared; but a new rhetoric and a new mythology are quickly evolved to rationalize vestigial instincts. As personal loyalty to a sovereign decays, defense of the nation takes its place; the "will of God" is replaced by the hypothesis of natural selection through war.

But as war comes to be organized by skilfully prepared professional opponents, it becomes progressively more expensive. Industry and science are drawn into the preparation program. Munitions industries take the place of the armorers' guilds of the Middle Ages, but the scale on which they supply the needs of armed forces gives them a much greater influence. Officers of the army, navy and air forces must be in contact with various types of industrial groups—not only those which provide the mechanical material of war, such as guns, explosives, tanks, chemical poisons—but also those which supply such necessary incidentals as petroleum, oil, clothing, food. Although the general public cannot be absolved from a very large share of ultimate responsibility, the patriotism of the armed forces is nourished more immediately by the activities of industrial corporations and syndicates operating on an international scale. An officer of high rank is useful on retirement as a director of an armament firm. Ex-officers are employed as agents of munitions companies for selling guns, tanks and bombing airplanes to nations which do not manufacture such goods; and by inducing one nation to buy arms, the agent can increase the market also in neighboring nations. As the armaments trade is partly international, whichever side wins the race, shareholders on both sides gain money. Moreover newspapers are frequently owned outright by armament firms; while in many important journals military correspondents are accorded a position above that of writers on business or the arts.

The influence of militarist groups on foreign policy is also secured through naval and military attachés, some of whom assist the sale of armaments abroad, search out military secrets and communicate with the war departments independently of the ambassadors to whom they are nominally subordinate. In most systems of government there is also a small general staff which has much more influence upon cabinets than any non-military group. Thus the admiration for war or at least the assumption that it is inevitable or likely—the spirit of militarism—exerts a continuous pressure upon public policy behind the scenes.

The timeworn rhetoric of militarism—punctuated with unrealistic presuppositions regarding the ineradicable pugnacity of man, the biological value of natural selection through war, the responsibilities of citizenship, the nobility of self-sacrifice in defense of fatherland, the cultivation of Spartan virtues—has lost much of its effectiveness in concealing the deeper lying vested interests in whose behalf it is employed. The military caste in every nation is part of the social class in control of public affairs; and nearly all existing communities today are traditionalist in their social standards.

Those in control are honored. The desire to control other men, as instruments or inferiors, is much stronger and more widespread than the desire to attack "enemies" or foreigners; and the authoritarian military structure serves to canalize this desire for domination. The sense of superiority is enjoyed by all ranks in armed forces above the rank and file; and the actual exercise of domination is shared by a whole officer class. This gives a social prestige to what might otherwise be a merely individual tyranny over the instruments of a commander's will. Even in "democratic" armed forces preparation for war, like war itself, makes it essential that the majority shall give up all individuality and become passive instruments of another's will. Again, the military caste preserves the self-confidence of those who feel the simpler kind of self-importance. Many who lack qualifications by birth or wealth can gain social prestige by their physical prowess or cunning in a militaristic society; while, on the other hand, a considerable section of the leisure class finds in military activity its only outlet and source of influence. Small groups therefore desire to secure or maintain prestige for themselves or their "nation" by the only means they can conceive as giving prestige—superior force and cunning. War itself is for them a sort of glorified sport, alluring both in its savageness and in its hazards.

But militarism does not survive only upon the desire for domination and violence in "upper" classes. It depends also upon the existence of the type of person in every community who enjoys being ordered about and prefers to have no moral responsibility for his actions. As unconscious supporters of militarism there must be added all who cannot find relief for themselves from the routine or monotony of an industrial civilization. The desire for adventure merges with the desire for being "important." The bank clerk or the grocer can be treated as a "hero" when he wears a military uniform. Wherever a community is rigidly controlled by traditional tabus, the younger and more vigorous are attracted to what promises relief, even at the risk of death for themselves or disaster for all. The drums, flags, medals and signs of rank in connection with war have a great appeal, and all the customs and beliefs they express connect men with a past which they have learned to admire.

The whole moral tradition in the West is affected by the way in which history is written and taught so as to exalt the military virtues and justify past violence. Each nation learns that in past wars it has been victorious; that its most important contacts with other nations have been military conflicts; and that its "heroes" are those who have won victories over foreigners. Naturally all these wars are believed to have been for the maintenance of "right"; and war is conceived as the situation in which one serves the nation, while in peace each man is supposed to pursue his own advantage. In non-republican countries kings and princes wear military uniforms. In all countries national pageantry is military. The past dominates the present and the future, through the unconscious reception of moral standards drawn from early chroniclers and poets. Militarism survives more strongly upon feeling as the reasoning upon which it once rested becomes more obviously inapplicable.

The history of this attitude toward war begins, at least in western civilization, with the primitive adventure described in the Homeric poems, which expressed admiration for bodily strength, cunning, courage and good fellowship. The incidental evils caused by these virtues when employed in war are not remembered, if the vanquished are slain or enslaved. Next comes the admiration for resistance to alien force, as expressed in Greek poetry of the sixth and fifth centuries, which survives in Plato as a tradition of valor. In his *Republic*, war against outsiders is assumed to be inevitable; and the criticism of war in the work of Aristophanes and Euripides seems to have had very little effect. The Spartans appear to have been militaristic in the crudest sense; but the majority of the Greeks were too sensitive to excuse the brutality of war on the ground that it promoted certain virtues.

In China there developed at a very early date a strong antimilitarist sentiment, which is expressed in the conception that the warrior ranks lower than the scholar and the trader. In India Buddhism had enough influence to undermine the primitive admiration for violence and the military virtues. But in Japan, on the contrary, in spite of Chinese and Buddhist influences, the moral ideal implied in *bushidō* supported an extreme form of militarism in the governing class. Both the good and the bad elements inherent in blind loyalty and disdain of death are still explicitly emphasized in the Japanese tradition.

In the West the Roman tradition has been the most powerful influence in the development of militarism. *Virtus*, or valor, constituted the highest Roman ideal. The great men of Rome were warriors. The Roman Empire was the result of

successful war; it was maintained by military efficiency; and only when Roman citizens began to be civilized enough to desire to avoid service in the armies did Roman civilization decay. In the fourth century it became difficult for the Roman authorities to raise troops except by recruiting "barbarians"; but troops had become the only basis of governmental authority since the later years of the republic. The Christians, who were unwilling to serve in the army, seem to have been influenced by objections to the traditional ritual rather than to war; the educated assumed that they could hire soldiers. There was no conception that war itself was futile or objectionable. The "just" war was always one in which one's own side was involved. The simple enthusiasm of the early Roman attitude, which alone implied "militarism," had died down. Literature and history, however, still preserved the more obsolete primitive admiration for the adventurous warrior, with the simpler virtues of endurance, courage and loyalty to a leader. The names of Alexander and Caesar gave prestige to military virtue.

In the Middle Ages the conception of service combined with the admiration for adventure to create "chivalry"—a source from which modern militarism draws not a few of its tendencies. But no armed forces comparable to a modern army existed between Roman times and the fifteenth century; and at the latter date soldiers were mercenaries, who had only the virtue of loyalty to an employer or leader, if that. They were not regarded as ennobled by their activities. In the Reformation, however, the influence of the warriors of the Old Testament and of certain bellicose sentiments expressed therein gave a new fillip to the admiration for military virtues. War became God's instrument.

In the seventeenth and eighteenth centuries service in arms was one of the recognized careers for a "gentleman." The divine will in war was combined with ideas drawn from an earlier chivalry. War was service of a king or lord and at the same time an opportunity for seeing the world. By the seventeenth century the old feudal levies had already proved useless and mercenaries hired for a particular job were expensive or unreliable. A "standing army" became a necessity for the ambitious sovereign. In England the power of the army during the civil war and the Commonwealth and the fear of an armed force in the king's control led to the section in the Bill of Rights of 1689 forbidding the raising of a standing army except by leave of Parliament. The fear lest the civil power be overcome by an armed force survives in the English practise of making the Army Act dependent upon an annual acceptance by Parliament. Although in a sense this may be taken as an indication of the fear of militarism, it was tyranny which was the real object of attack.

The conception, however, that the civil power should be supreme over the armed forces became a tradition among democratic and liberal circles in England and France. The French Revolution introduced the conception of a citizen army, presumably immune from militarism; but Napoleon showed how easily the two could be connected. Despite the attempts of Benjamin Constant and his liberal successors in France to prove that the older technique of war was being rendered obsolete by the new commercial civilization, the tradition of militarism continued to persist. The most startling revelation of French militarism occurred in connection with the Dreyfus case, when "the word of an officer" was assumed by the spokesmen of the army to be beyond criticism. It seems clear that, even in a citizen army, the officer caste tends toward militarism. In 1911 Jaurès, echoing the antimilitarist sentiments of the parliamentary socialists, sought in *L'armée nouvelle* to establish the fact that it was possible to have a citizen army without militarism; but even he proposed the training of boys from ten years of age for possible war service in the future; and he accepted the traditional admiration for Napoleon and other military leaders whose intelligence he admired.

Meanwhile Germany was developing a new form of militarism. Prussia had defeated Napoleon by using the same appeal to the nation for raising armed forces which in the French Revolution had given Napoleon himself his first opportunity. The expulsion of alien conquerors by enthusiasts in arms, combined with the traditional Prussian admiration for valor and stern living, gave prestige to the leaders of the army. By an accident of history Bismarck, who had all the traditional admirations and an exceptional ability for putting them into practise, was able to use the results of the earlier resistance to Napoleon, which had saved Prussia, as a basis for uniting the German states in a new empire. The army became the symbol of imperial prestige, setting the standard of service and honor. The emperor was war lord. The feudal aristocracy took the lead in the armed forces and improved its own position by using the glamour of arms. The perfection of militarism, in its good

as well as in its bad sense, was attained among the upper classes in Germany in the years immediately before the World War. The German comic papers of the period, especially *Simplicissimus*, provide abundant evidence of the attitude of "outsiders" who were close enough to feel the social atmosphere. The militarism of Germany before the war was felt to be dangerous even by some Germans.

Although during the World War "militarism" came to acquire derogatory connotations as a result of anti-German propaganda, military virtues continued of necessity to be preached and a certain blindness to the actual realities of warfare was cultivated on both sides. At the end of the war there was for a time a violent reaction against militarism. In Fascist Italy, however, militarism soon reappeared disguised as a "national" gospel, and it has been intensively cultivated by Fascist or chauvinistic groups in other nations. Among such groups war is openly championed; a mythology of the nation supplies the place of "the will of God"; and control by an officer class is identified with social order. A less open form of militarism has likewise survived among certain small groups in almost every nation. Such militarism has been fostered to an unprecedented extent in the new systems of military training for boys in schools and colleges. The contention that preparation for service in the armed forces in a future war is useful "educationally," although it is a more or less honest camouflage, is a confession of the necessity in democratic nations of justifying in more rational terms the cultivation of the military spirit.

It is difficult to say whether the philosophers and social theorists have merely reflected contemporary attitudes toward militarism or have actually molded such attitudes. From the outset Christian theology has compromised with the warrior. It was assumed by theologians that war was inevitable; the only problem was how to be on the right side and, in a world whose "plan" was divine, the right side meant the winning side. Many protests were made against excessive cruelty, but few against the military spirit. With the Renaissance, however, Erasmus and others began to suspect the validity of the old arguments which excused war. Cornelius Agrippa in the *De incertitudine et vanitate scientiarum et artium* (Antwerp 1531) has a very pointed analysis of the ruffianism which is disguised as military honor. But philosophers likewise could find excuses as the church had done. In modern times the most systematic rationalization of militarism is to be found in Hegel's *Philosophie des Rechts*, where he says that war promotes unselfishness (sect. 338) and that in modern times enmity is not directed against individuals. In England the Oxford Hegelian T. H. Green, repudiating Hegel, delivered in his *Lectures on the Principles of Political Obligation* (in *Works*, vol. ii, 2nd ed. London 1890) an attack upon war as contrary to the nature of the state. Herbert Spencer, impressed by the rapid growth of militarism in Germany, set out to analyze what he called the "militant type of society" and traced the origins of militarism to the strivings of an "upper" class for social control. But on the whole the theorists of the later nineteenth century seem to have disregarded the importance of war as an institution. The wild metaphors of Nietzsche can scarcely be regarded as implying militarism; and Treitschke only repeats Hegel. Since the World War the popular movement which aimed at undermining the militarist admiration for war caused the "outlawry of war" in the Kellogg, or Paris, Pact of 1927; but no philosophical treatise either advocating or repudiating militarism has appeared.

C. DELISLE BURNS

See: WAR; ARMY; NAVY; MILITARY TRAINING; CONSCRIPTION; MERCENARY TROOPS; MILITIA; NATIONALISM; NATIONAL DEFENSE; MOBILIZATION AND DEMOBILIZATION; PATRIOTISM; CHAUVINISM; PROPAGANDA; LOBBY; VETERANS; ARMAMENTS; ARMS AND MUNITIONS TRAFFIC; MUNITIONS INDUSTRIES; ANTIMILITARISM; PACIFISM; OUTLAWRY OF WAR; DISARMAMENT; INTERNATIONALISM; FRONTIER; PRAETORIANISM; CHIVALRY; GENTLEMAN, THEORY OF THE.

Consult: Steinmetz, S. R., *Soziologie des Krieges* (Leipsic 1929), especially chs. iii and xiii; Cornejo, M. H., *La guerre au point de vue sociologique* (Paris 1930); Schmitthenner, Paul, *Krieg und Kriegführung im Wandel der Weltgeschichte* (Berlin 1930), especially ch. vii; Woodward, Ernest L., *War and Peace in Europe, 1815–1870, and Other Essays* (London 1931); Monteilhet, Joseph, *Les institutions militaires de la France, 1814–1932* (Paris 1932); Constant de Rebecque, H. Benjamin, *L'esprit de conquête* (new ed. with introduction by Albert Thomas, Paris 1918); Proudhon, P. J., *La guerre et la paix* (new ed. with introduction and notes by Henri Moysset, Paris 1927); Bernhardi, Friedrich A. J. von, *Vom heutigen Kriege*, 2 vols. (Berlin 1912), tr. by K. von Donat (London 1912–13); Nicolai, G. F., *Die Biologie des Krieges* (Zurich 1917), tr. by C. A. and J. Grande (New York 1918); Fuller, J. F. C., *The Reformation of War* (London 1923), and *The Dragon's Teeth: a Study of War and Peace* (London 1932); Berth, Édouard, *Les méfaits des intellectuels* (Paris 1914); Wingfield-Stratford, Esmé, *They That Take the Sword* (New York 1931); Johnston, R. M., *Arms and the Race* (New York 1915); Upton, Emory, *The Military Policy of*

the United States, United States, War Department, Document no. 290 (1912); Mahan, A. T., *Armaments and Arbitration* (New York 1912); Millis, Walter, *The Martial Spirit* (Boston 1931); Kenworthy, J. M., *Will Civilization Crash?* (London 1927); Dickinson, G. Lowes, *The Choice before Us* (London 1917) pt. i, and *War: Its Nature, Cause and Cure* (London 1923); Madariaga, Salvador de, *Disarmament* (New York 1929); Bratt, Karl Axel, *Kampen om folken* (Stockholm 1929), tr. by E. Classen as *That Next War?* (London 1930); Kehr, Eckhart, *Schlachtflottenbau und Parteipolitik 1894–1901*, Historische Studien, vol. cxcvii (Berlin 1930); *Rustung und Abrustung: eine Umschau über das Heer- und Kriegswesen aller Länder*, ed. by K. L. von Oertzen (Berlin 1931); Jaurès, Jean, *L'armée nouvelle* (3rd ed. Paris 1932); Liebknecht, Karl, *Militarismus und Antimilitarismus* (Berlin 1907), tr. by S. Zimand as *Militarism* (New York 1917); Delaisi, Francis, *Les contradictions du monde moderne* (Paris 1925), tr. as *Political Myths and Economic Realities* (London 1927), and *Le pétrole* (Paris 1921), tr. as *Oil* (London 1922); Chartier, Émile (Alain), *Mars, ou la guerre jugée* (5th ed. Paris 1921), tr. by D. Mudie and E. Hill (London 1930); Inter-Parliamentary Union, *What Would be the Character of a New War?* (London 1931).

MILITARY DESERTION is a term which properly applies only to the flight under various forms and for various reasons of free persons from obligatory or voluntary military service. Such flight may take place in peace time or in war time before or during battle; it may be secret or open, temporary or permanent, or it may involve desertion to the enemy. Desertion may occur on either land or sea, but in general there has been less desertion from navies than from armies because of the greater physical difficulty involved. The frequency of desertion, the causes and contributing factors as well as the methods of suppression have varied with the different historical epochs and military systems.

In early times, when armies were created almost exclusively for war emergencies, desertion was essentially a war phenomenon and all forms were punished in the same way, usually with death. Elementary considerations of self-preservation and military morale made necessary such a simplified means of administering justice. With the emergence of standing armies of mercenaries or of conscripted citizens the same forms of desertion occurred also in times of peace. At the same time a more humane treatment became possible. Distinctions began to be drawn between escapes not deliberately undertaken to avoid military duties and desertions which did have this direct purpose. If through cowardice or fear a soldier hid himself in a safe place before a battle or took refuge in the rear or with the baggage, he was not regarded as a deserter. Distinctions were also drawn between desertions in time of war and in time of peace, between simple and conspiratory desertion and between first and habitual offenders. To go over to the enemy was counted the most serious crime. Except for certain periods these distinctions have been preserved throughout modern times.

The Romans were the first to regulate in a standard fashion the penalties attaching to desertion. In the oldest times, since the Roman army was a religious institution, desertion was a religious offense and deserters as well as those who instigated or assisted them were put to death. Later the *Lex julia* treated desertion as a lese majesty (*q.v.*). The scientific system of military penal law, which was developed under the Caesars and codified by Justinian, treated desertion in general as perfidy and violation of an oath but made certain allowances for extenuating circumstances. Although in times of war the death penalty was visited even upon first offenders, in peace time it was inflicted only upon second offenders. Going over to the enemy was considered high treason and incurred death by torture.

The Germans had at first no separate military penal law apart from their general legal system. Cowardice and desertion in battle were regarded as serious crimes, and simple deserters as well as deserters to the enemy were killed. At the time of the great migrations beginning about the fifth century the various Germanic tribes possessed no uniform notion of desertion; some tribes treated it as high treason, others only as a violation of contractual law. An attempt to regulate military crimes was made in the Frankish empire, where desertion was considered a violation of the oath of allegiance, a breach of faith against the king and as among the Romans lese majesty. Irrespective of motive it was punished by death and confiscation of property. Mediaeval military law, which was laid down by kings and emperors, regarded desertion in most cases as a violation of a contractual relationship between feudal lord and vassal; its punishment based on customary law was relatively mild. Summary capital punishment for desertion was introduced by the Hussites and by the Swiss at the end of the Middle Ages.

In periods when the militia system prevailed desertion was regarded as a crime against the state and entailed the most serious consequences, including outlawry and the loss of family and possessions; it was consequently of relatively rare occurrence. In the periods of the condot-

tieri and mercenary armies, on the other hand, desertion was merely a transgression of private law, a violation of contract, and therefore frequent, especially in cases where the soldiers had failed to receive their pay. Forcible enrolment, hard living conditions, rude treatment and cruel punishment were additional reasons which made desertion chronic and widespread in both peace and war.

The institution of mercenary soldiers gave rise to a specially regulated system of law. The articles of war covering both army and navy became the basis for the punishment of desertion. The Dutch and Swedish articles acquired a decisive significance for Protestant and the Hapsburg-Spanish articles for Catholic countries. The concept of desertion was given a very narrow meaning; extenuating circumstances began to be taken into account; summary execution gave way to regular court procedure. Desertion by officers and habitual and conspiratory desertions were considered especially serious crimes. Special rules governed cases of desertion by whole regiments. Certain laws of the French code for deserters, such as mutilation and hard labor, were adopted by other European countries. At the end of the eighteenth century capital punishment was generally replaced by flogging through the line and by trench digging, methods that had long been customary in France.

Since fugitives usually found little difficulty in crossing frontiers, thus making pursuit impossible, the various states began particularly in the eighteenth century to conclude special extradition treaties, called cartels, which were made as a rule for a certain number of years and were generally renewed on expiration. They specified in precise form the conditions under which deserters were to be extradited and fixed graded rewards for the denunciation of fugitives. None of these devices, however, was effective in checking the growth of military desertion.

With the emergence of the modern standing national armies and especially with the prevalence in the nineteenth century of the concept of the "nation in arms" desertion again became as in the days of the old militias a disgraceful crime against the state and the nation. A decrease in desertion was brought about by an intensified national consciousness, which stigmatized the crime with moral outlawry, as well as by the serious material and legal consequences which it entailed.

The progressive character of modern legislation shows itself in the sharp line of demarcation drawn between illicit temporary absence and escape from the colors as well as in the fact that the distinguishing criterion of the two concepts is found in the intention to escape military service permanently. The Latin nations introduced a complicated system of various kinds of desertion, while the Germanic countries erected a clear and concise set of laws on the simple basis of the intention to avoid service. The penalties moreover remained harsher in the Latin states than in the Germanic. The recent British, American, Dutch and German codes meet fully the demands of modern conditions.

Related to desertion in certain respects was emigration before compulsory military service duties had been fulfilled; this became common as a result of the large emigration from Europe to the newer countries during the nineteenth and the early twentieth century. Some countries attempted to assert their claims for such duties upon the return of the emigrants to their jurisdiction. These attempts, especially where they were directed against individuals who had become naturalized in the country of immigration, gave rise to a number of international controversies. Steps toward the regulation of this matter in the interest of its naturalized citizens were taken especially by the United States through treaties concluded with various countries modeled on the Bancroft treaties of 1868. Under these treaties the country of origin relinquished its claims on such persons except when they returned and resided in that country for two years after having been naturalized as American citizens. The League of Nations has also attempted to promote some uniform policy on this matter, which still remains a source of some international friction (*see* DUAL CITIZENSHIP).

The attitude of the people toward deserters has also varied with the different periods. In the time of the free mercenary soldiery bitter warfare existed between the populace and the deserters, who often organized themselves into marauding bands. Individual deserters were seized and killed or delivered to the proper authorities. In times of standing armies, on the other hand, deserters enjoyed the full sympathy and even the support of the populace. Despite the menace of punishment the fugitives were offered shelter, given employment under assumed names and assisted across the frontier. When the concept of the "nation in arms" began to prevail in the nineteenth century, deserters were again regarded as contemptible enemies of the people and traitors to the nation. Exceptions were made

only in the case of those who deserted for religious or idealistic reasons.

The psychological cause of desertion in war time lies chiefly in the deep rooted fear of death; in peace time it is most frequently caused by sexual desire, homesickness or intoxication and sometimes by mental disorders, feeblemindedness and epilepsy. Mass desertion, usually due to sudden panic, has in recent times been caused also by a general demoralization brought about through enemy propaganda.

National, social or political factors may also enter into the problem of desertion. The army of a country which embraces diverse national or racial strains may contain large irredentist groups whose sympathies lie more with the enemy, to whom they are allied by blood and race, than with the state to which they are bound politically. Mass desertion by such groups may exercise decisive influence upon the outcome of military operations, as in the Napoleonic wars, where Germans were made to fight against Germans, and in the World War, where various alien stocks and national minorities eager for statehood were represented in the Austrian army. This disintegrative tendency is particularly marked when the army in which these alien stocks are fighting is suffering reverses.

Desertion also occurs in revolutions and civil wars, in which political parties and social classes play the same role as irredentist groups in international wars. The disintegration of the Russian army in 1917 displayed how blood and class ties can link non-commissioned officers and plain soldiers with the cause of the revolution. The support of revolutionaries by an army often marks the decisive step in the real beginning of a revolution; this was to a certain extent the situation in France in 1789 and is very frequently the case in South American revolutions. It is difficult to draw any clear line of distinction between mass desertion under such circumstances and mutiny (*q.v.*).

Desertion may also be a factor in determining the outcome of prolonged civil conflicts. Such was the case in the American Civil War. While it was a problem to both sides, it was in the Confederate army that desertion was especially troublesome: thousands of conscripts, uninterested in the war because of ignorance or unconcern or motivated by Unionist sympathies and actual hostility to the southern cause and further influenced by widespread public apathy in some sections and by the lack of proper food, clothing and shelter in the army, deserted at every opportunity either to return to their homes or to join the enemy. Such desertions occurred not only individually but in groups of all sizes; whole regiments deserted at a time. The consequent weakening of the Confederate armies played a considerable if not a decisive part in the ultimate defeat of the South.

PAUL SCHMITTHENNER

See: MUTINY; ARMY; WAR; MORALE; FRATERNIZING; MERCENARY TROOPS; CONSCRIPTION; LESE MAJESTY; COURT MARTIAL; MILITARY LAW.

Consult: Endres, Karl, *Der militärische Waffengebrauch* (2nd ed. Berlin 1903); Stier, Ewald, *Fahnenflucht und unerlaubte Entfernung*, Juristisch-psychiatrische Grenzfragen, vol. ii, pts. 3–5 (Halle 1905); Bendix, Ludwig, *Fahnenflucht und Verletzung der Wehrpflicht durch Auswanderung*, Staats- und völkerrechtliche Abhandlungen, vol. v (Leipsic 1906); Sattelmayer, Richard, *Die unerlaubte Entfernung* (Tübingen 1910); Sagmeister, M. E., "Die Fahnenflucht im römischen und altdeutschen Kriegsrecht" in *Archiv für Militärrecht*, vol. i (1909–10) 434–38, and vol. ii (1910–11) 19–26; Gebauer, C., "Auslieferung von Deserteuren im 18. Jahrhundert" in *Archiv fur Kulturgeschichte*, vol. ii (1904) 78–83; Lonn, Ella, *Desertion during the Civil War* (New York 1928); Martin, Bessie, *Desertion of Alabama Troops from the Confederate Army* (New York 1932); Real, Walter, *Ausreissen und unerlaubte Entfernung nach schweizerischem Militärstrafrecht*, Zurcher Beiträge zur Rechtswissenschaft, n.s., vol. xxiii (Aarau 1930).

MILITARY GOVERNMENT. *See* WARFARE.

MILITARY LAW is sometimes used as a general term describing the rules which restrict or justify the power of military commanders in all circumstances. At other times it is differentiated from martial law, military government and the control by troops acting in aid of civil authorities and is used to express an Anglo-American concept which refers usually only to the criminal law administered by courts martial, with jurisdiction only over the armed forces of the United States. It might also refer to the peculiar rules of property responsibility enforced by boards of officers under Article 105 of the Articles of War and by boards of survey authorized by the United States army regulations.

This narrow conceptual limitation of the expression military law is of recent origin and would have little relevance in other countries or in past times. In Roman law the term is used to define the peculiar privileges of the Roman soldier, who had the benefit of a separate civil court. One of his privileges, the right to make a nuncupative will, still survives but is not considered part of the "military law" today. In England under the feudal system a Court of the

Constable and Marshal, or *curia militaris* (*see* COURT MARTIAL), had jurisdiction over matters dealing with arms and heraldry. It was not of course restricted to discipline of armies in the field, since there was no defined difference between military and civil government. After the feudal system had waned, this court became an instrument of the crown and came in conflict with the jurisdiction of the rapidly expanding common law courts. The result of the conflict was to reduce its jurisdiction to disputes over heraldry, and it was finally voted "a grievance" by the Parliament of 1640. Modern military codes owe little to the Roman or early English systems.

Military trials by officers probably always existed as incidents to control of armed forces. Sometimes they were carried over into other fields. Military courts appear before military codes. Henry VII is said to have used them to impose fines for disloyalty. Both Mary and Elizabeth resorted to them against religious enemies, the former against the Protestants and the latter against the Catholics. Charles I, in attempting to raise and support an army, employed the term martial law, which at that time described any form of military trial, against citizens who refused to aid him, with the result that Parliament forced his assent to the Petition of Right in 1628, declaring all such trials—and by inference all trials by martial or military law—illegal, at least in periods of peace.

Such use of military law was without benefit of any organized code, although some regulations did exist. In the struggle between king and Parliament which followed, however, both sides issued articles of war and empowered commanders to try and punish military offenders "according to the Course and Custom of the Wars." The practically identical codes of the two opposing armies issued in 1640 and 1642 were framed after study of similar articles issued by Gustavus Adolphus in 1621 (published in London in 1639) and probably of the Dutch military code of Arnheim. It is significant that these codes, with the "councils of war" which were employed by Cromwell shortly thereafter to enforce them, mark the beginning in England of modern codified military law and courts martial. After the Restoration Charles II issued Articles of War and authorized courts martial. It was not until the accession of William and Mary, however, that Parliament passed the Mutiny Act of 1689, which is generally considered the first statutory enactment of British military law. Almost two hundred years later this act, as variously amended, was replaced by the Army and Discipline Regulation Act of 1879, which combined Articles of War and the statutes. This act was subsequently repealed and then reenacted by the Army Act of 1881, or Annual Act, as it is now customarily called because together with its amendments it must, like the earlier mutiny acts, be reviewed and reaffirmed each year, possibly as a reminder of the continuing authority of the civil government over the military. British military law is now based on parliamentary acts and the regulations framed under their authority or in accordance with the custom of the military service.

Military law in the United States grew upon this British foundation. The first national code, passed by the Second Continental Congress in 1775 and revised the following year, is practically a copy of the British Articles of War of 1765. The first revision of the Articles of War after the adoption of the Constitution of the United States was made in 1806, and there were subsequent revisions in 1874, 1916 and 1920. The most significant change in procedure in these revisions is found in the provision of the most recent code for the appointment of separate prosecutor, defense counsel and legal adviser of the court (law member) for all general courts martial, all of which functions were formerly performed in part at least by the judge advocate. Today the judge advocate may still occupy the anomalous position of both prosecutor and legal adviser of the court but only on special request of the court. In its substantive aspects the code has been enlarged to include all common law crimes except murder and rape in time of peace. With regard to purely military offenses the original Articles of War have not been substantially changed.

In addition to the Articles of War and a very few supplementary statutes, usually called "military law," there must be added to the body of military law the lawful orders of the president, as commander in chief of the army, and of his duly authorized subordinates, all of which have the force of law. Chief among these is the *Manual for Courts-Martial*, which is issued by executive order. In the main it amplifies the Articles of War and prescribes trial procedure. Next in importance are *The Army Regulations* and *General and Special Orders* of the War Department. Commanders of corps areas and territorial departments issue for their respective commands similar regulations and orders, and

so on down the chain of command to the smallest post. All such regulations are enforceable in courts martial and must be accorded the status of law in the command to which they apply.

There is a notable lack of conceptual organization of general legal principles in the administration of military law. Former court martial cases are practically never cited as precedents, although their use for this purpose is expressly authorized in the manual for courts martial. Civil cases are referred to but rarely and only for the purpose of defining judicial concepts, such as the common law crimes. The atmosphere of the military court, the method of appeal and the absence of published "opinions" in decided cases prevent the building up of any substantial body of articulate doctrine. Opinions of the judge advocate general are published, however, and serve as a general directive in administering military law.

Custom and the inarticulate emotional attitudes based upon it play an important role in the administration of the law governing the armed forces of the United States. Such attitudes are illustrated in the use made by military courts of the concept conduct "to the prejudice of good order and military discipline" denounced by Article 96 of the Articles of War, and of the concept conduct "unbecoming an officer and gentleman" denounced by Article 95, and for which dismissal from the service is mandatory. Definitions of these terms by the manual are merely illustrative. The final decision in any particular case is a matter for the court to determine upon its own knowledge of customs of the service, evidence as to such customs being superfluous and in fact never offered. The civil and criminal law concepts of conspiracy and criminal contempt are equally vague. Yet civil courts dislike this lack of certainty and build up great bodies of literature to conceal the elasticity of such terms by elaborate formulation of principles. The military mind conceives no such necessity and thus escapes a great deal of very complicated logical analysis. A comparison of the elaborate philosophical treatment of the concept contempt of court by civil tribunals with the practical treatment of the concept conduct "unbecoming an officer and gentleman" by military courts illustrates the essential difference in fundamental attitude between military and civil law.

Questions of conflicting jurisdictions and the possibility of review of court martial decisions by civil tribunals are determined in a more conceptual and less practical atmosphere; for such matters lie within the field of the civil courts and must be explained in their language in terms of conceptual legal categories. Thus courts martial are held not to be among the inferior courts of the United States which Congress may establish under article 3 of the constitution, since the judges of all such courts must be appointed for life or during good behavior. They are therefore no part of the judicial branch of the government, but instrumentalities of the executive provided for disciplinary purposes [Dynes *v.* Hoover, 61 U. S. 65 (1857)]. For purposes of permitting collateral attack they have been held not "courts of record" and therefore not entitled to the presumptions of regularity in favor of such courts [*Ex parte* Watkins, 28 U. S. 193, 209 (1830); Chambers *v.* Jennings, 7 Mod. 125 (1702); Wilson *v.* John, 2 Binney 209, 215 (1809)]. On the other hand, it is found that when double jeopardy is pleaded before a civil court by one who has already been tried by a court martial for the same offense, it is held that the court martial is judicial in nature [*Ex parte* Reed, 100 U. S. 13 (1879); Grafton *v.* United States, 206 U. S. 333 (1907)] and that its judgments as *res judicatae* are entitled to the same respect as those of any court in the land and are beyond the jurisdiction of inquiry of any civil tribunal [Smith *v.* Whitney, 116 U. S. 167 (1886); *Ex parte* Mason, 105 U. S. 696 (1881)].

Whether boards of survey of property responsibility or boards of officers assessing property damage against individuals under Article 105 of the Articles of War would be considered "courts" with reference to these various situations is an interesting speculation.

From the logical necessities of the civil courts in the United States has arisen the conceptual definition of military law to which reference has already been made. When courts decided to relinquish their authority to the military in such matters as occasional labor disputes, they had to justify their action under the constitution. This was done by constructing the concept of martial law which is supposed to exist as a matter of fact in times of extreme disorder. Courts then dodged examination of whether this "fact" of martial law actually existed by treating the executive declaration of its existence as conclusive except in the most extreme instances. It then became logically necessary to distinguish the continuing control of armed forces in times of peace by calling it military law and to differentiate the orderly military control of foreign

territory which might use civil courts as one of its instruments, by calling it military government. Finally, because the situations in which the phrase martial law had been used were subject to an unpleasant connotation, a fourth concept known as "the law governing troops used in aid of civil authority" was invented, which will justify most, although not all, of the military action taken during strikes and similar disorders.

Thus military law in recent times has come to have an accepted conceptual content which can be defined only in terms of the other three phrases outlined above. So fixed is the belief in the fundamental character of these concepts that older writers on the subject, such as Lieber, who did not differentiate between martial law and military law at a time when there existed no reason for such distinction, are accused of a loose use of terminology and a neglect of logical analysis. Failure to recognize or to discuss the purposes for which these distinctions have unconsciously been invented or the situations in which they become relevant has resulted in a very considerable body of conceptual doctrine about the phrase military law which has nothing to do either with the control or with the discipline of troops.

THURMAN ARNOLD
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See: ARMY; COURT MARTIAL; WARFARE; MILITARY DESERTION; MUTINY; MARTIAL LAW.

Consult: Bray, J., *Droit romain, essai sur le droit pénal militaire des romains* (Paris 1894); Krafft, É., *Justice militaire* (Lausanne 1918); Augier, J. G., and Le Poittevin, G., *Traité théorique et pratique de droit pénal et de procédure criminelle militaires* (Paris 1918); Vico, P., *Diritto penale militare* (2nd ed. Milan 1917); Hellwig, A., *Einfuhrung in das Militärrecht*, Staatsbürger Bibliothek, vols. lxxxi–lxxxiv, 4 vols. (München-Gladbach 1917–18) vols. i–iii; Crémieu, L., "La justice militaire et la Société des Nations" in *Nouvelle revue*, 4th ser., vol. xli (1919) 193–211; Holdsworth, W. S., "Martial Law Historically Considered" in *Law Quarterly Review*, vol. xviii (1902) 117–32; Clode, C. M., *The Administration of Justice under Military and Martial Law* (2nd ed. London 1874); Banning, S. T., *Military Law* (17th ed. London 1929); Great Britain, War Office, *Manual of Military Law* (7th ed. 1929); Wilkins, R. J., and Chaney, W. S., *Handbook of Military Law* (London 1930); Glenn, G., *The Army and the Law* (New York 1918); Winthrop, W., *Military Law*, 2 vols. (2nd ed. Washington 1920); Ansell, S. T., "Military Justice" in *Cornell Law Quarterly*, vol. v (1919 20) 1–17, and "Some Reforms in Our System of Military Justice" in *Yale Law Journal*, vol. xxxii (1922–23) 146–55; United States Laws, Statutes, *Military Laws of the United States* (7th ed. 1930); United States, War Department, *Manual for Courts-Martial, United States Army* (1927).

MILITARY OCCUPATION consists in the action of organized military forces in taking control within territory not under the sovereignty of any state on behalf of which they are acting, and in the condition of affairs resulting therefrom. It is usually conducted by armed forces of sovereign states but it may be accomplished by troops not in the service of any recognized (de jure) state. Thus forces of a dependency which is in revolt against the metropolis, and whose belligerency has been recognized, may occupy territory of the metropolitan state—within the revolting dependency or in loyal territory—or perhaps of a foreign state. Unorganized guerrilla troops, however, can hardly accomplish this result.

The factual seizure or passive acquisition of control is decisive in establishing occupation rather than intent, the presence or absence of which has no effect in the attainment or prevention of the result. Intent without seizure will not produce occupation nor will a factual occupant be able to escape responsibility because of desire to do so. On the other hand, a proclamation of intent, while not strictly necessary, clarifies and strengthens the position of the actual occupant.

Strictly speaking, military occupation may take place in any foreign territory, including territory not under the sovereignty of any state. It is moreover true that such *terra nullius* is or has been most frequently occupied and acquired for the state not by civilian settlers but by naval and military forces. Nevertheless, this type of occupation is not considered to belong to the category under discussion. The question of whether or not a given occupation extends to a particular area is, in view of the nature of the institution, solely a question of fact.

On the other hand, military occupation as now defined may take place in time of peace as well as in time of war; and the two forms, while not dissimilar in their results, differ somewhat as far as their bases are concerned. History is filled with instances of these two basic types of military occupation. Virtually every war produces one or more cases of belligerent occupation, that of Belgium by German forces from 1914 to 1918 being the most striking. Pacific military occupations have also been increasingly numerous in the period since 1789 under the various systems of international regulation and alliances prevailing in Europe as well as in various outlying quarters of the Near East, the Far East, Africa and Latin America. Although a detailed study of these dozens of cases would

reveal the greatest diversity of relationships, a few broad conclusions may be abstracted.

The action of establishing occupation is hardly distinguishable from simple invasion or the incursion of troops into foreign territory and, like simple invasion, is not immediately accompanied by any extensive consequences. It is only when stable occupation has been completed that such consequences arise, and the first phase of the action is important chiefly with reference to the grounds upon which it may be undertaken.

The grounds upon which military occupation may, under common international law, be undertaken against another state are almost, although not entirely, the same as those upon which military action of any kind, or at least military invasion, may be undertaken. There exist doubtless rights of defensive military action within its own territory, possessed by every state as against every other state, which constitute little or no basis for invasion of the latter; and perhaps also rights of invasion, as in the case of capture of an imminently dangerous bandit, which give no rights of occupation. But in the main the legitimate grounds for occupation are the legitimate grounds for war or military action short of war—reprisals or intervention in time of peace—including military invasion. Military occupation is a form of action resorted to in connection with or as part of reprisals, intervention or war, and its justification must be sought in the justifications therefor. While there are thus included grounds which justify military occupation in time of peace, it appears that the difficulty of justifying any military action by one state against another in time of peace, that is, unless the former is willing to take the responsibility and is in a position to wage a war against the latter, renders mere military occupation in time of peace also somewhat difficult to sustain in point of law.

Conventional agreement may of course constitute a basis for military occupation. In this case the actual entry of foreign troops, being thus permitted, does not constitute an invasion, and the whole action is likely to be regulated or colored by the agreements in question. Not only the right to enter and remain but also the powers of the occupants are affected thereby. The tenure of the occupants is less precarious if founded upon a conventional agreement, and their powers can be defined therein so as to avoid subsequent objection and controversy. Perhaps the occupation of territory under lease may also be included here.

The grounds upon which one state, at war with another, may occupy the territory of a neutral state—as, for example, Salonika in 1915—must of course differ from those upon which it could legitimately occupy enemy territory; but they would not differ greatly from those upon which a state might properly occupy the territory of any other state with which it was at peace, except that the duties of neutrality on the part of the third state would constitute an additional obligation, the failure to discharge which might justify reprisal, intervention or war. The possibility that a belligerent state might misjudge or overestimate its rights against the neutral in this connection does not really alter the essentials of the situation.

The consequences of military occupation are severely restricted in one direction and at the same time very flexible in another. Such occupation definitely does not constitute conquest or a transfer of territorial sovereignty as long as the opposing state continues the struggle to regain its possession and does not by ceasing such struggle tacitly cede the territory, under the principle of *uti possidetis*. On the other hand, the occupant enjoys extensive powers over the territory and all persons and things therein, under both customary and conventional international law.

Thus the occupant may supervise or even conduct the administration of civil government, either through the existing officials or others whom he may designate in their places or add to their number, levying and collecting taxes for this purpose. He may also levy and collect money contributions and requisition supplies and services for the needs of the army of occupation. He may take possession of cash and securities, arms, means of transport and war supplies belonging to the occupied state; private property of this type may be seized subject to an obligation of restoration or compensation. Finally, he may utilize immovable state property under the rules of usufruct—religious, charitable, educational and artistic or scientific establishments excepted.

Even here the occupant is restricted in his activities. He must maintain order and safety, and respect unless absolutely prevented the laws in force, maintaining public services in full vigor. He may not require from the inhabitants participation in military operations against their own country or an oath of allegiance to him. He must respect private life and property and religious liberty. He may not impose collective

penalties for individual acts. For all payments and delivery of supplies payment or receipt must be given, and the property of local communities may not be treated as state property.

The net result is nevertheless to give the occupant large powers of legislation and executive and judicial authority. He may issue executive orders regulating the possession of arms, public assembly and all types of communication. He may conduct or supervise the operation of civil and criminal courts, and above all he may exercise a severe police power in the interests of public order and the safety of his troops. Within the limits already indicated he may assume substantially complete governmental authority, legislative, executive and judicial.

The actual relations between occupant and local population thus vary widely. Under certain circumstances, such as absence of hostility or great differences of language and culture, the occupant may interfere little with local life and government. In other cases a veritable state of siege, with martial law and rigorous repression, may ensue. This does not depend upon the wishes of the territorial sovereign or even of neutral states whose nationals or property may be affected, for these are all without voice in the matter. If local social and economic life is allowed to continue actively, it will be because this does not injure and may even aid the occupant in maintaining a quiet and thus an effective occupation. Local industry and trade as well as export and import trade are likely to be seriously deranged, given all the circumstances of the situation, and the occupant is obliged to make such arrangements as are possible for the provisioning and shelter of the population.

All of these matters vary somewhat between occupation in time of peace and in time of war as well as between conventional, or agreed, occupation on one side and common law, or *in invitum*, occupation on the other. Even when occupation is undertaken without consent of the territorial sovereign in time of peace, tension between occupied and occupant is likely to be less than in time of war unless there be armed resistance to the occupation. Where the occupation proceeds by agreement there will not only be no need, presumably, for the occupant force to use all its ordinary authority; but its rights may also be limited by advance stipulation. It still appears that in absence of such provisions it possesses such authority as is necessary in the situation.

Similarly the psychological results, both at the time and later, may vary widely, as may the consequent effect on relations between the states. Certain occupations have embittered international relations for years; others have had no great effect. Sometimes an occupation even creates sentimental ties between the two countries. As most occupations are of the *in invitum* type and as under the best of conditions the presence of alien troops is likely to produce friction, the results are most frequently unfortunate.

Occupation is terminated by factual relinquishment or loss of power of control in the territory by the occupant or expiration of the conventional basis of his authority. Successful rebellion or reestablishment of the power of the territorial sovereign terminates occupation. The position of the occupant is precarious, in the absence of convention, and depends upon the ability to maintain his authority by force. Similarly the termination of war removes the legal basis for military occupation of enemy territory; other grounds, as, for example, treaty stipulation, may then exist for continued occupation; and the change from belligerent to pacific occupation does not destroy the essential character of the situation, although the juristic position of the occupant is somewhat altered.

The main principles of common international law on military occupation have long since been reduced to code form and given official international sanction. Thus the United States adopted in 1863 a code of rules dealing with the conduct of war on land, including military occupation; and this code was later of influence in the drafting of similar codes in other countries. In 1874 an attempt was made to agree upon an international code at a conference held in Brussels, but the draft convention, although it exercised some influence later, was never formally adopted. In 1880 the Institute of International Law, in session at Oxford, adopted a manual, *The Laws of War on Land*, of the same type, which likewise had some influence. Finally, in 1899, there was adopted, at the First Hague Peace Conference, a *Convention with Respect to the Laws and Customs of War on Land*, the *Annex* to which contained a section dealing with "Military Authority over the Territory of the Hostile State." This convention and its annexed code were revised at the Second Hague Peace Conference in 1907, and its articles—articles 42 to 56 of the whole code—constitute the basis of the present law on the subject.

None of these codes deals with military occupation in time of peace, because the subject

treated emerged as a subdivision of the law of war in general. The law relating to military occupation in time of peace has not been codified elsewhere, but it is believed that the operation if not the inception of such occupation is governed by substantially the same rules, in the absence of conventional stipulations to the contrary; under such circumstances, however, the military occupant may refrain from exercising all his powers and may not need to exercise all powers of control which would be warranted in the presence of a hostile population.

Military occupation, particularly occupation in time of peace, is undertaken for a variety of political objectives, which do not lend themselves to simple classification. It may be that occupation is undertaken to attain results which lie entirely outside the legal rights of the state taking action; its purpose may be to render aid to another state, to secure strategic military position, to ward off action threatening the safety or other rights of the state, to guarantee observance of a treaty, such as a treaty of peace, or payment of an indemnity or to vindicate previous violation of rights. War may or may not occur in any one or all of these cases. All of them constitute intervention in the sense of forceful interference in the affairs of another state. Whether they are morally or legally justified depends upon other considerations; namely, the justifiability of the war or intervention in question.

As for the present evolution and future of the institution, much may be conjectured but little concluded with certainty. In modern times military occupation without war has increased in frequency, in the variety of its objectives and the circumstances under which it has been undertaken; and while critically regarded in most quarters, it has not been attacked or condemned as uncompromisingly as has war itself. If, as seems not altogether improbable, grounds for international military coercion are to persist, it will perhaps be military occupation short of war rather than war *pleno jure* that will be found serviceable, especially if war itself is banned. Even international military police action on land would partake of this character. Hence the nature of the institution and the rules of law governing its operation are not without potential importance for the present and future.

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See: DE FACTO GOVERNMENT; MARTIAL LAW; SANCTION; INTERVENTION; WARFARE; REPRISALS.

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MILITARY ORDERS. In its original and most important sense the term applies to a type of Christian religious order composed of warrior monks. A product of the crusades, the military religious orders represent the combination, in its most perfect form, of the two mediaeval ideals of religious devotion and of chivalry. The enthusiasm which sent vast armies marching to the East to rescue the holy places from the hands of the infidels was the expression of a deep felt religious zeal and emotion on the part of a warlike society which found in the crusade an opportunity to exercise its chosen and honored profession of arms in the cause of religion and to receive in return for the congenial business of fighting the rewards of piety and asceticism. This crusading zeal was organized and perpetuated in the military religious orders, which kept alive the idea of the holy war long after it had ceased to have any popular appeal.

While the same cultural preconditions—the concept of a holy war and a well developed ideal of chivalry—were present in Islam as in Christianity, the Moslems failed to merge these elements into a clearly defined institutional pattern.

Certain counterparts of the Christian orders have, however, appeared at sporadic intervals in the course of Islamic history, in the case of such associations of fighting religious as the mediaeval Marabouts and the modern Tījānīya order. The Janizaries of the Ottoman Empire, although in many ways analogous to the military orders, were in reality merely a fighting corps in which celibacy and a rigid code of loyalty were by-products of a military discipline designed to serve the ends of the political authority. Buddhism has produced warrior monks, a notable example being the Japanese Ikko men of the fifteenth and sixteenth centuries; but the phenomenon may usually be explained as a local adaptation of the monastic system to the unsettled conditions attending a militant feudal age or civil war.

The Christian military orders resembled the regular orders of monks in that they took the vows of chastity, poverty and obedience; they operated according to rules based on those of Cîteaux and St. Augustine; they enjoyed all the privileges and immunities of monks, being subject only to the pope, from whom they received their charters; finally, like the monastic orders they were international and had establishments and lands in every country of Christendom. Their essential difference from the old monastic pattern consisted in their introduction of a new ideal, that of service to Christ and man in the hospital and on the battlefield rather than that of withdrawal from the world to the peace of the contemplative life. Of the three most important orders only the Knights Templar (founded *c.* 1118, chartered in 1128) were purely military in function. Created for the purpose of protecting pilgrims to the Holy Land and carrying on the crusade, the Temple was eulogized by Bernard de Clairvaux in a treatise entitled *De laudibus novae militiae* (1129), which set the seal of the church on the militant monasticism of the orders. The Knights Hospitallers (or Knights of the Hospital of St. John of Jerusalem, founded shortly after the first crusade) grew out of an eleventh century Amalfitan hospital in Jerusalem and were organized originally for hospital work; soon, however, they added warfare to their functions and became the rival of the Templars as a military order. The Teutonic Knights (or Order of the Knights of the Hospital of St. Mary of the Teutons in Jerusalem, founded *c.* 1190 during the third crusade) were organized among the German crusaders for joint military and hospital service.

From the point of view of the evolution of Christian religious orders the military orders represent in many ways a transition from monasticism to the friars, not only in their ideal of service but in their centralized administration and machinery for representative government. Differing structurally only in minor details, all three military orders were headed by a grand master and an advisory council of grand officers and were divided territorially into provinces, or *langues*, which were further subdivided into priories and commanderies. The provinces were roughly identical with the various countries where the order was established; for example, the provinces of the Hospital in the twelfth century were France, Italy, Spain, Germany, England and the Orient. The general chapter, a body composed of representatives from the local chapters as well as of the central officers and endowed with powers which made it theoretically the supreme organ of the order, assured interlocking control between the central government and the local units. The same end was served by the custom of placing one of the grand officers at the head of each of the provinces to direct local affairs in cooperation with the provincial chapter.

Although all members were represented in the chapters and all were equally subject to the rule, each order was rigidly stratified on the basis of function and privilege into three classes: chaplains, who performed the religious duties of the order; sergeants or serving brothers, free born men who acted as squires to the knights and labored in the hospitals; and the knights, who constituted the main fighting force of the orders and from whom all officers were elected. The knights, recruited exclusively from the nobility, gave to the orders their essentially aristocratic character. It was in them that the ideals of secular chivalry and of religious devotion converged. Their feudal background tended to intensify the insistence of the orders upon independence and autonomy and throws light on the tensions which at a later stage marked their relations to the unifying monarchs.

Throughout the twelfth and thirteenth centuries the orders rendered a valuable service in defending the crusading states and in keeping up the war against the Moslems. Their forces were the most dependable supports of the kings of Jerusalem, and the military history of the crusading states has well been said to be the history of the orders. Especially important were the knights in maintaining a series of castles

which defended the Christian kingdom and in supplying naval assistance to that seaboard community. The rivalry of the orders in the thirteenth century greatly weakened the resistance to the Moslems, especially since on occasion Hospital and Temple each joined forces with a Moslem prince against the other order. While they assisted the kings of Jerusalem it was always as allies, and they preserved the right to make peace and war at their own will. But although uncertain allies, they were always in the front in any war against the enemies of Christ; their valor in the last heroic defense of Acre in 1291 is one of the finest chapters in crusading history. "When they were called to arms they did not ask how many of the enemy there were but where they were," said Jacques de Vitry of the Templars. Pope Gregory IX referred to the Templars and Hospitallers in a letter of 1231 as those "without whom it is believed it is in no way possible to govern."

Nor were the kings of Jerusalem the only ones to avail themselves of the services of the knights. They were used by the popes and by secular monarchs for diplomatic missions and as members of the councils. Philip Augustus of France was served constantly by Aimard, a Templar, and Guerin, a Hospitaller, the latter continuing to serve the crown under Louis VIII and Blanche of Castille in the capacity of chancellor. Henry III of England and Philip IV of France both employed Templars as their almoners. The strong castles of the orders were often used as repositories for treasure, and the Temple in Paris became the chief treasury of the kings of France. It was in this connection that the Templars sowed the seeds of their own downfall, for they became the creditors of Philip IV and aroused the envy and covetousness of that grasping and impecunious monarch: when Philip IV began the process against the Templars he owed them 500,000 livres, which he had borrowed in 1299 to pay the dowry for his sister. In England with its more highly developed administrative machinery the Temple was never as in France the sole or the chief royal treasury. Nevertheless, throughout the thirteenth century it not only served as a storehouse for revenues flowing into the Exchequer and the Wardrobe but apparently was also very frequently employed to collect and administer the revenues independently. Further the Templars developed a system of international banking by means of letters of credit, which they issued to their houses in other lands. Money could be deposited in the house of the Temple in one country and drawn from its house in another by the presentation of a letter issued by the officials of the house in which the funds were deposited. It was through the Temple that St. Louis sent money to Palestine after his return to France in 1254; John of England paid some debts in Auvergne through the agency of the Hospital; in 1220 Honorius III paid 5000 marks to Pelagius, his legate on the fifth crusade, with an order on the Temple at Paris for the money which had been collected in England for the crusade. Whether or not the Templars received interest in their financial transactions is not quite clear, although there is some evidence to indicate that in cases of delay in repayments of loans they added a heavy fine to the principal—a practise not inconsistent with canon law as interpreted by Aquinas. At any rate their various services to the monarchs were to some extent compensated by the award of special political or economic privileges, in addition to the immunities which as a monastic order they enjoyed in perpetuity: thus John of England exempted them from paying tolls in their wine and salt trade. The Hospitallers as well as the Templars were important commercial powers, competing for a time with the Genoese in the trade between southern France and the Levant.

With the fall of Acre in 1291 and the attendant expulsion of Christians from the Holy Land, the military religious orders lost their primary *raison d'être*. The Templars survived the obsolescence of their functions by little more than two decades. Undoubtedly the resentment and the confiscatory impulses of other monarchs besides Philip IV of France were aroused by this proud autonomous corporation of warriors, whose landed holdings alone are said to have been 9000 *manoirs* (a *manoir* being equivalent to the cost of maintaining one knight) in 1291 and 10,500 in 1307. But it was Philip who, with the added motive of eliminating a creditor, called to his aid the Inquisition, in one of the earliest historical applications of that instrument to the purposes of the civil power. Charged by Philip with all sorts of crimes, including heresy, unnatural vice, idolatry and black magic, the Templars in France were found guilty on the basis of confessions forced under torture, although they were not convicted elsewhere. In 1312 the Temple was officially suppressed by the timorous and compliant Clement V in the bull *Vox in excelso*, which while not declaring the guilt of the order authorized its abolition.

Its landed properties were made over to the Hospital, which collected them only after paying heavily in most cases; its movable goods enriched the royal and papal fisces. The question of the guilt or innocence of the order is still a matter of dispute, but the documentary evidence in the case is generally favorable to the knights; and there is no denying H. C. Lea's statement that "If we accept the evidence against the Templar we cannot reject it in the case of the witch."

The Hospitallers and the Teutonic Knights justified their continued existence by securing new occupations on the fringes of Christianity, where they again took up the war for religion. But since in their new homes and ambitions they were territorial lords far more than religious orders, the opening of the fourteenth century may be said to mark the end of the period of the truly religious orders. Settling successively in Cyprus (1291–1310), Rhodes (1310–1522) and Malta (1530–1798) as the frontiers of Christianity receded to the West, the Hospitallers, under names which varied with the location of their sovereignty, governed these islands for centuries as outposts against the Moslems. They became primarily a naval power, fighting not only the Turks but the Barbary pirates. From their strategic positions in Rhodes and Malta they policed Mediterranean traffic and systematically harassed Moslem commerce. Although their warfare against the pirates materially aided Christian commerce, on the other hand they frequently used their maritime resources to prevent realistically minded Christians from trading with the infidels, an aspect of their activities which netted them valuable loot from intercepted vessels as well as considerable trouble with western powers. Their militant spirit became gradually relaxed, and it was a somewhat *fainéant* order which Napoleon routed from Malta in 1798. Its lands have by now been entirely secularized, and it exists today only as a papal order. In Germany and England, however, its tradition has been carried on in the Protestant hospitaller orders of the Evangelical Johannites (founded in 1852) and the St. John Ambulance Association (organized in 1826 and incorporated under its present name in 1888), which maintain hospital services; during the World War the latter organization distinguished itself by its work in cooperation with the British Red Cross.

The Teutonic Knights had a field of activity prepared for them when they were driven out of Syria. As early as 1230, under the mastership of Herman von Salza, they had obtained from the pope and the emperor permission to conquer, convert and colonize the Slavic lands along the Baltic, where the Sword-bearers of Livonia were already operating. Working with the Sword-bearers, whom they absorbed in 1237, they occupied the districts of Prussia, Livonia, Courland, Estonia and Pomerania and settled them with German colonists, military vassals, urban burgesses and peasants. Granting extremely liberal terms in their charters to towns, they soon established many prosperous commercial centers in their territories, founding or resettling Thorn, Danzig, Riga, Reval, Königsberg and Marienburg. In 1309, simultaneously with the removal of its headquarters from Venice to Marienburg, the order transferred its allegiance from the papacy to the emperor, whose declining power held little menace for the order's autonomy. Master of the eastern Baltic littoral, the order became commercialized and allied with the Hanseatic League, to which most of its towns belonged; in fact the commercial prowess of the Hansa depended to no small extent upon the pioneering of the knights in the Baltic region. For a time the order itself joined the league. Maintaining and operating a fleet of commercial vessels, it exported large quantities of wheat and of amber, of which it had a monopoly, to Flanders and the west, and received in return cloth, salt and spices to be resold in the east. It also acted as intermediary between east and west for the trade in Russian wax and furs and in Hungarian copper and lead. Through these profitable undertakings it amassed stores of gold, which it loaned to foreign princes, exacting interest without pretense or concealment. The grasping commercial policy of the order, its high tariffs and monopolies, eventually estranged the Hansa and the towns, while its territorial advance forced Poland and Lithuania into union against it. After the disastrous defeat of the knights at Tannenberg in 1410 their subjects rebelled and called in the Poles; by the treaty of Thorn in 1466 the order was deprived of most of its land, retaining East Prussia as a fief from the Polish king. In 1525 Grand Master Albert of Hohenzollern took advantage of the Lutheran movement to secularize the order and convert East Prussia into a hereditary fief in his family, at whose extinction in 1618 it passed to the Hohenzollerns of Brandenburg. A few knights who refused to acknowledge the secularization of the order migrated to Austria,

where they continued the organization under the auspices of the Austrian monarchs, as an order of noblemen for hospital service.

The work of the Teutonic Knights in converting and colonizing Prussia is of great significance in the history of Germany and of the Slavic east. While before their advent the eastward movement had no doubt been prepared by economic conditions in the German territories west of the Elbe-Saale line, it was nevertheless the Teutonic Knights and their predecessors the Sword-bearers who organized the migration, united it under the glorifying banner of a crusade, provided it with its military strength and planned the process of settlement. They brought German colonists and German culture into a Slavic land and developed a wilderness into a prosperous country. With the same system and success which characterized their town building they undertook the improvement of agriculture; although in the process they reduced the native population to serfdom, they elevated the districts of east central Europe to the position of food exporters. When they accepted Lutheranism they gave the reformed religion a northern base from which it operated through the Baltic, and by the passing of their lands into the house of Hohenzollern of Brandenburg that state was strengthened and set on its way to becoming the leading power of Germany.

In Spain and Portugal, where the war against the Moors made the crusade a permanent institution, the idea of military orders had early been taken up with enthusiasm. In addition to the Templars and Hospitallers, both of which amassed great wealth in Spain through the generous grants of the Spanish monarchs, the peninsular crusade was ardently conducted by a number of special orders, such as Calatrava (chartered 1164), Aviz (organized 1166) and Alcántara (organized 1183), constructed usually on the model of the Temple. The Order of Santiago de Compostela established in 1175 to protect pilgrims on their way to the famous shrine of that name was unusual in that celibacy was not required of its members although it was under the rule of St. Augustine. Since it attracted the most aristocratic nobles, it soon became the wealthiest and strongest order in the peninsula. With the expulsion of the Moors in 1492 the orders became superfluous. Many of them remained in the peninsula, doing little save interfere in domestic politics, in which they consistently championed their own class—the feudal nobility—against the crown, thus hindering the process of political centralization. Others, like Aviz, Montesa and the Order of Christ, the last two of which had been created in Aragon and Portugal respectively shortly after the suppression of the Temple to take over its possessions and members, adapted themselves more successfully and continued the holy war by invading Africa and combating the Barbary pirates. The Order of Christ, unlike the great international orders, had been founded by the monarch to serve as a political as well as a religious instrument and it well illustrates the dual aspect frequently assumed by the crusade against the Moors through entanglement with princely ambitions. Not only was the order most prominent in missionary work in Africa but under the grand mastership of Prince Henry the Navigator it played an important role in Portuguese expansion. From missionary work the orders turned to commerce and eventually became entirely secular in their interests. In the late fifteenth and the early sixteenth century the members of all the orders were released from their vows, the orders themselves ultimately becoming royal decorations.

The hospital tradition developed its own group of orders, most of which were active in establishing hospitals, in rescuing prisoners and in doing similar social work. The Order of St. Lazarus to care for lepers was founded in Jerusalem during the twelfth century, but it became a military order and lost its hospital connection, finally being fused in France with the Order of Our Lady of Carmel and in Italy with the Annunziata. The Order of St. Thomas of Canterbury was another hospital organization founded by Richard I at Acre to care for English crusaders. The orders of Montjoie (1180) and of Our Lady of Mercy (1218—commonly called the Mercedarians) and the Trinitarians (late twelfth century) were all organized to rescue captives from the Moors in Spain.

In the fourteenth and fifteenth centuries, when enthusiasm for the crusade was being artificially stimulated, various princes organized minor orders within their own states on the model of the great military orders. Few of them, however, ever accomplished anything of note in the crusading field. Most of the important ones, which include the orders of the Sword (Cyprus, *c.* 1346), the Star (France, 1351), the Golden Fleece (Burgundy, 1429), the Holy Ghost (Naples, 1352) and St. Stephen (Tuscany, chartered 1561), became eventually royal orders of merit. The purely honorary royal orders, like

the Garter (*c.* 1348) and Bath (1399) in England, the Thistle (reestablished 1687 on an older order of uncertain date) in Scotland, St. Andrew (1698) and St. Catherine (1714) in Russia and St. Stephen (1764) in Hungary, derived in idea from these royal crusading orders but were intended merely to provide the king with a way of rewarding his friends and councilors or of recognizing distinguished service. Such decorations and orders of merit as the Legion of Honor and the Victoria Cross are still further derivations.

Even while democracy has advanced, the idea of founding new orders for whatever purpose or for no purpose at all has not been forsaken by the aristocratic nobility. The latest order is the Russian Order of St. Nicholas the Miracle Worker established in 1929 among former soldiers of the Romanovs. The memory of the old crusading orders is also preserved in Freemasonry; and the modern Knight Templar and Scottish Rite Mason feels himself the heir, through channels purely oral and unsubstantiable, of the traditions of the Knights Templar of Jerusalem.

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See: RELIGIOUS ORDERS; RELIGIOUS INSTITUTIONS; MONASTICISM; MISSIONS; PROSELYTISM; CRUSADES; JIHAD; CHIVALRY; HANSEATIC LEAGUE.

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MILITARY ORGANIZATION. *See* ARMY; WARFARE.

MILITARY TRAINING. "So sensible were the Romans of the imperfections of valour without skill and practice," says Gibbon, "that, in their language, the name of an army was borrowed from the word which signified exercise." With the fall of Rome, however, military training rapidly died out. The tactical genius of Epaminondas, the thorough training of Philip of Macedon, the methodical warfare of Alexander, the complete preparations of Caesar, were almost totally obscured. Knights were individually skilled with lance, axe and sword and they were encased in armor. That was the offensive and defensive strategy and tactics of the time. The manorial castle was the only school of arms. There the armorer was important: he and the professional retainers and bodyguards of the lord. The people, the peasants, were massed mobs in battle, little more. The phalanx and the legion were forgotten. The Assize of Arms and the Statute of Winchester were silent on practise. Military training, in the sense of creating a level of efficiency throughout an organized and disciplined force, did not exist. During the Renaissance Vegetius and Aelianus were read perhaps by some, but without serious application of the rules of tactics or intelligent organization of training. It was not until the time of Wolfe and Sir John Moore that Xenophon's light skirmishers began to be understood and

their rules tentatively applied to modern conditions.

The revival of interest in military training may be attributed primarily to the invention of the musket and the cannon. "Fire power" became the crucial element of war; its utilization required skill, and its employment on a large scale necessitated practise. Training and organization began. "Trained bands" of mercenaries rapidly supplanted the emergency militia; the "artillery company" of London held shooting exercises, and there was "drill" at Mile End and in St. George's Field. Louis XI of France hired Swiss instructors for his troops and held a three years' "camp" to forge an effective army. Military training began to take the form of precise movements in drill and manoeuvre. To the Italian wars, the Dutch wars, the wars of Gustavus Adolphus and the stern discipline and hard work of Cromwell, whose ideal was the "organized abnegation of self," may be traced the beginnings of modern armies.

The work of Frederick the Great marks a still more pronounced advance in the technique of military training. His methods left their mark on military life for over a century. Napoleon, who studied and adapted his tactics and his strategy, pronounced the Prussian army the model of its age. Frederick's contemporaries considered him "master of the science and practice of the profession of arms." Times changed and means and methods with them; yet even today much of his technique remains.

Frederick had his troops constantly practised in what is now called "close order" drill, insisting always upon absolute perfection of movement. What is more, this drill then bore a direct relation to battlefield formations and manoeuvres. As a result the Prussian lines "formed from column of route without confusion, gap or overlap." It had been the custom to go into order of battle "in the processional manner" and to consume hours in the process. Frederick hit his foes before they were ready and secured his speed, not by hurry, but by plan and precision of movement. In order to prevent confusion in the difficult matter of musketry fire the Prussians were trained day after day, until they were able to secure a concentration of fire far superior to that of opposing armies. In his use of cavalry also, Frederick differed from his opponents. His troopers were frequently exercised in peace time at full speed and over very broken ground in battle formation. Men were killed at these drills, but his cavalry commander said that worry over a few broken necks would prevent the king from having the kind of horsemen he needed for the field. Such training, coupled with the independence of decision Frederick granted his cavalry commanders, enabled the Prussian cavalry to deliver a terrible shock, in solid mass, in a whirlwind of dust and steel.

Composed of conscripts, of foreign mercenaries, of the slum scourings of "press" gangs, and even of surrendered enemies, the Prussian army could never have achieved its victories or have undergone the rigorous training Frederick prescribed were it not for his harsh and rigid discipline. "This is an extraordinary man," said a French general of that age, "this prince who can get such good service from troops who detest him. Three quarters of his men would desert if they had the chance; nevertheless they fight like devils until that time comes." Frederick's interest in morale and in esprit de corps was an important part of his policy. Each of his soldiers was made to feel that his particular regiment was the best in the world with a reputation to be guarded and enhanced. "Without the Pomeranians," said Frederick to them, "I would not risk battle." Regimental "colors" were to Frederick's soldiers what the eagles were to the Roman legions. "I demand exact obedience," he declared. "The cavalry regiment which does not, upon orders given, immediately dash full plunge into the enemy, I will unhorse and make a garrison regiment. The infantry battalion which, meet what it may, pauses but an instant, shall lose its colors and sabers, and I will cut the trimmings from its uniform." This deference to morale is vital in military training. In addition to creating accuracy of manoeuvre and technical proficiency, training imparts self-confidence in one's ability to inflict more loss than will be suffered, and properly supplemented this results in esprit de corps and in a high morale. This fact was almost forgotten. Until recent decades, the tendency in professional armies has been to imitate Frederick's harshness without his understanding. In general, Frederick's followers fastened blindly upon minor details of his system, without seeing the complete picture. Although his supremacy was actually due to the factor of surprise, his less intelligent contemporaries and successors attributed it to his peculiar formations and to his drill and training, the externals of which they imitated for decades.

During the eighteenth century there were created certain military schools for the training

of officers. It was, however, the age of privilege, and noble rank was a surer road to preferment than application. The military schools were schools for nobility rather than training schools. There was a wide gap in education between field tactics and such military strategy as was taught in the schools. Technical training was satisfactory in engineering and in artillery and broad in military history, but in tactical thought it was almost nil. During the early years of the French Revolution there was one faint promise of military training in leadership, for the need of officers to replace those of the dissipated royal armies of France was keenly felt. In 1794, following a suggestion by Barrère, a practical military school was envisaged, a true École de Mars, not in a building like the old schools, but with nothing but a plain, tents, cannon and arms. It became, however, a tool of politics, teaching principally "love of country and hatred of kings," and was eventually abolished on account of its partisan doctrine. Finally, in 1802, Napoleon himself drafted the policies and saw to the founding at Fontainebleau of what afterwards became St. Cyr, an establishment to train selected youths in six months, to instruct others in a year to command a "division" and in two years to command a battalion. From this school he constantly called classes to shape and train his new drafts.

During the next half century the mark of Frederick the Great was on the armies of Europe. There was the captain whose idea of tactics was that "the movement of the troops must be majestic and in mass," while he himself never worked. Barrack square drill was the chief end of man, as Ian Hamilton says. Except in Germany, which was an exception on the continent, and in America, where the problems of the Civil War and the practises of Indian campaigning brought a newer and clearer military knowledge, stagnation set in for three quarters of a century until the Franco-Prussian War taught lessons which compelled thought. It was the age of the "regular" army—nationalistic to be sure, but more professional than patriotic, narrow and consecrated to habit and ancient form. In 1883 Sir Charles Dilke said, "The British soldier of today, and still more the British soldier of ten years ago, has been prepared much more for the show of peace than for the work of war." Viscount Wolseley, later to become commander in chief in England, in 1886 condemned the entire existing apparatus governing military education.

The French were not very different. They who had had the fullest experience in raising and preparing troops for battle under a master of the art and the finest military thinking of the eighteenth century, as exemplified in Maillebois, Guibert and Bourcet, speedily forgot or neglected the lessons their nation might have learned. The constitutional party was opposed to military force as a threat to public liberty. Louis Philippe neglected instruction. The French army became a thing of reviews, parades, inspections, with minute detail and grave solemnity. Discipline was an end, not a means, as with Frederick the Great. Training was almost such as to make the army forget its duty of preparation for war and to organize it for the panoply of peace. There was an occasional sham battle "before the ladies and for the entertainment of the villagers." A mere "comic opera" campaign into Spain threw the army into confusion. No one knew what to do. All notion of how to take the march or collect provisions had been lost. It is scarcely surprising that such armies, embarked for the Crimea, could not compare with the performance of Americans habituated by frontier campaigning to the circumstances of war. It took the Yankees at Vera Cruz two days to reach the city from the beach and thirteen days to open heavy fire. It took the allies before Sevastopol seven days to move an equal distance and twenty-seven days to bring their heavy guns to bear.

During this period there were extensive military school systems in every country in Europe, but only in Germany was there real progress in military training. It is not mere chance that it was a German, Goethe, who called the wars of the French Revolution and of Napoleon "the end of the war of kings and the beginning of the war of the people." After the defeat at Jena, Prussia was compelled to think of military training rather than of just an army. With its army limited in size, Prussia limited the term of enlistment to six months and devoted attention to practical training more intensively and more thoroughly than did any other nation and so successfully that each year eighty thousand well disciplined and well instructed soldiers returned to their homes. Germany learned its lessons well and with a clear understanding of what military training should be developed the finest armies in the world. Germany conquered in the Franco-Prussian War because its military training was superior. From Jena to Sedan, Germany had achieved a philosophy and a method of military

training. It was this that made the German armies so splendid in 1914, not the mere fact of nation wide conscription. Thus the authority Dilke described it in 1883: "When the recruit joins, towards the close of the year, he is as a rule a rather stupid and unwarlike creature. He has not even the proper control of his limbs, and this control is one of the first items of knowledge to be imparted to the soldiers of every nation. . . . The control of limb is given by what is called drill, beginning by the exercise of legs and arms, and going on to the rhythmical movement of smaller and then larger bodies of men, and thence to the handling and use of arms."

The next step in the process was what might be called technical instruction. Hardened and apt for its work, the army must be taught to use its weapons and to manoeuvre on the battlefield. It must know and practise hygiene and sanitation. It must know its tactics. There must be uniformity of technique, in language and method. But principally men must be taught to honor their country and their regiment and more especially to honor themselves, to have self-respect and confidence. "As we ascend," says Dilke, "from the obsolete military rule of the last century to the latest developments of the art of war, we find a steady movement in the direction of allowing freedom to the soldier, and this combined with the strictest discipline. Every individual is carefully taught that upon his especial exertions and even judgment may depend the issue of some crisis in the struggle for the safety of the Fatherland. Moral and tactical training go hand in hand. So soon as the ordinary drills are completed, soldiers begin to be taught in small groups, the best way of facing an enemy and obtaining an advantage over him. No more iron discipline exists than that which prevails in the German army, and its officers will tell you that there are no soldiers who require it more than do the Germans; yet in the face of this iron discipline, and even in accordance with it, the greatest individuality is inculcated. In its system of tactics, the German army works by small bodies, beginning even from what is called the group under a non-commissioned officer, and that group is tactically trained as thoroughly as the division of the army corps. Every German non-commissioned officer is taught to consider himself a leader of men, not only in the barrack room but on the field of battle."

Thus during the last half century a new element has been introduced into military training. The entire tendency of tactics has been toward dispersion, a dispersion forced upon troops by the concentrated fire power of modern weapons, from the breech loading rifle to the machine gun. Massed battalions early disappeared from the scene. Even the three-ranked line of Frederick the Great was too dense. During the Spanish-American War and the British Boer War military men learned that soldiers must be deployed as skirmishers. In 1911 the rule in the American army was one man per yard. Fire power was the rifle; the more rifles on the line the greater the fire power. But the machine gun made such formations suicidal, and five yards per man is now the minimum. A lieutenant may find his platoon spread over a front of 240 yards. Control is difficult; it must be exercised through and even by the subordinate leaders. The voice is drowned in the din of battle. The "old army" is gone forever. The captain who used to shout commands as if on ceremonial parade must count upon another kind of discipline. Discipline is not the "flog or hang" of Frederick; it is a state of mind which obtains orderly results even in the absence of orders. It is part and parcel of confidence and harmony of training. Now training must develop the mental and moral as well as the physical qualities of the man in the ranks.

Modern methods of tactical training, by which this result was attained by the Germans in 1870 and in other armies since that date, were initiated by the Germans, imitated by the French, fostered by Foch, copied by the American group at Leavenworth and are now recognized as the only practical methods. War is a practical art. It has its doctrines and its principles; but on the sloping hillsides it has its concrete facts. The commander must estimate the situation which confronts him; he must ponder and decide the problem; he must secure vigorous execution. War cannot be learned, as Foch has pointed out, by practical experience, "for that school cannot be opened and closed at will." Nor can it be learned by lectures or by reading. It can be learned, and during the last half century it has been learned in all the major armies of the world, by the "problem" method—in the field with troops, in the field without troops and even indoors with maps. In assumed situations officers and soldiers, generals and privates, are asked to give their decisions and their orders, to move their troops, real or imaginary. In military schools, in postgraduate courses, in corre-

spondence courses, in field manoeuvres of all units from squad to division and army corps, soldiers the world over are thus playing the game of war, developing independence of thought, of judgment, of decision and of resolution in the face of difficulties. There must be uniformity of instruction to secure uniformity of understanding, lest by misapprehension of intention and by frantic flights of genius the organization fly apart or wear itself out with internal friction. But there must be practical understanding, and it begins to seem that this is the key to modern military instruction. With the spread of popular education and of universal suffrage, of ideas of equality and of liberty, it becomes impossible—and undesirable —to resort to the bludgeon type of discipline of Frederick the Great. Patriotism, teamwork, esprit de corps, are now essentially the appeals.

If this method of training was considered necessary prior to the World War, it is now looked upon as doubly essential. All armies at present admit that the corporal and his squad form the largest unit which can be controlled directly by a single man in battle. The solid masses of other days are but the ghosts of armies. Battle is a struggle of small groups, and the nationals whose groups act best in cooperation in accordance with the general plan will have the best of the day of battle. It is indeed a fact that instructions now given to privates, corporals and sergeants on the proper operations of squad and section are more soundly based and more thoroughly useful than the majority of the works on "tactics" which enjoyed popularity throughout Europe during the eighteenth century.

Training of officers commences early. For many decades there have been "military schools" in Italy, Russia, Austria, France, Germany, England, Switzerland, the United States and elsewhere, to give basic education and military knowledge and technique to prospective officers. During the latter part of the nineteenth century, there were created various "schools of application" attended by officers already commissioned. At first these schools gave instruction only in specialized technical branches, like military engineering and artillery service. But now in all armies such schools exist for infantry and cavalry, and there are "staff schools" or colleges which give instruction in troop leadership, in command duty, in staff functions, in the coordination of effort. At these schools the "applicatory," or problem, method of instruction is used. The French cavalry school at Saumur was organized in 1853, not as a mere school of equitation but in order to train instructors who should diffuse through the corps a uniform system of instruction. Moreover there have been "garrison schools" regularly attended by all officers on duty with troops, at which they refresh their minds and constantly practise in "sand table" or map manoeuvres the use of the principles they have learned. There are in addition annual manoeuvres, which are not mere sham battles or tests of training, but principally means of practical instruction and exercise on actual varying terrain. The officer must be a student all his life, "reading and rereading the lives of the great captains," as Napoleon said, or else, as the British regulations insist, he must study the application of the principles of war, as they are enunciated in field service regulations, by means of concrete cases from military history.

"Every military writer of repute," remarked Dilke fifty years ago, "holds the opinion that the necessity for thorough tactical knowledge comes down much lower in armies than it used to do, and that even non-commissioned officers must now be able to handle small bodies of troops with a tactical insight which used to be looked on as the attribute of generals only." Sixty years ago General Upton found the Italians conducting special schools for their non-commissioned officers. Other observers agreed that in all continental armies of that time tactical exercises were developed and practised which had been designed with the special aim of making the non-commissioned officers think.

Modern warfare requires also fuller instruction and understanding on the part of the ordinary private than did the warfare of a hundred years ago. The Americans and the British now declare the need of "instruction along educational lines" to increase the military efficiency of the simple soldier. For decades intelligence and education have been insisted upon as essential. In Great Britain and Germany illiteracy today is virtually non-existent. In these countries there is a quicker understanding to begin with; in other nations—considering the type of warfare that must be waged in modern times—some deference must be paid and some time must be devoted to increasing facility of understanding. The stiff lines and heavy columns of long ago required mere mechanical obedience; the flexible interdependent groups of today require a high degree of understanding and knowl-

edge in the lower ranks. All armies strive to instruct to this end.

It is said that the present German army is the most efficient in the world; its privates are trained like 100,000 sergeants. It has attained this proficiency because it happens to be—by compulsion, it is true—composed of long service professionals and has made its training progressive. In the British army the same opportunity exists. All recruits spend six months in "depot battalions" before going to join their proper units, and training then can be more advanced. In compulsory service countries, like France, all drafts join in large groups. Professional instructors lead them stage by stage until they reach an appropriate degree of "unit" proficiency. In America the flow of volunteer recruits to each regiment or company is neither steady nor regular. Recruits join in driblets. Training tends to repeat itself year after year and often with much energy spent in repetition within the year. Every effort is made to make training progressive, but there is the handicap of a constantly changing personnel. In Australia and Switzerland, which have such short terms of service that their conscripts are called "militia," progression in training is secured by reaching into the schools and giving physical drills, even military drills, and utilizing "service periods" to form and practise organizations, to have field manoeuvres and higher types of instruction.

How long then does it take to train an army? The Australians with their premilitary work already accomplished do it in short periods of time before their men reach the age of twenty-six. The Swiss also have premilitary preparation, have sixty-five to ninety days the first year, and refresh minds and reweld units in eleven-day (or fourteen-day) periods thereafter until the citizen has passed the peak of vigorous manhood. The British term of service lasts for many years, the American for one or three. The German and the Austrian terms used to be three years, which is the period now specified in Italy; France has a one-year term. Yet under the pressure of urgent enthusiasm or pressing danger much quicker work can be done. After Tilsit the German period was limited to six months. During the World War the average American in France had six months' training in the United States and two months' training in France. It took approximately a year before the first increments of "Kitchener's mob" began to be effective in France. The French volunteers of 1791, under competent leadership, won the battles of Valmy and Jemmapes with from six to nine months' training. In 1846 it took four or five months "under expert officers and strict discipline" to prepare troops for the field when Zachary Taylor moved from Matamoros into Mexico. The question of training in the hour of emergency is thus a special problem. First, there must be time to harden the troops. Second, there must be time to create a full organization and to arouse a sense of unity and of esprit de corps. Third, there must be time to teach habits in handling weapons and correct thinking in tactical situations. It has been repeatedly said that American casualties in France were 50 percent more than they need have been because of lack of training. To state that eight months is insufficient is difficult, however, when other troops have been prepared in less time. If the experience of Napoleon is recalled and results elsewhere are compared, it is possible to say that that time might be slightly shortened. To shorten it, certain preliminary conditions must be met. There must be an organization capable of expansion so that new increments may be absorbed in and not simply added to existing units of competent veterans who, like Napoleon's veterans of 1809, stamp the recruits with their seal. There must be a certain modicum of military training disseminated throughout the citizenry of the country, similar to the premilitary training now current in Australia and in Switzerland, and perhaps to the school, college and summer camp training given in the United States today. There must be an extensive corps of competent instructors, like the depot units of Britain, which finish with their recruits in six months; like those of Germany, which were able in four weeks to forward competent replacements to units in the theater of operations; like those of the commissioned and non-commissioned groups of the American regular army charged with supervising the training of National Guard and reserve units for a future emergency. The American complement of such instructors and the leavening of veterans in the "National Army" divisions of 1917 were insufficient for the task; the United States is now far better fitted to execute a similar expansion. There is always a compromise between the McClellan who wants to train interminably and the politician who wants decisive action and a victory by immediate battle.

It has sometimes been said, and critically, that every army in the world is training for the "last" war. The indictment holds that there is

nothing progressive about military training, and some British writers like to allude to the "monastic" mind of the soldier. But the indictment is not true today, for the rule now is to follow the precepts of Marshal Foch, who before the World War told a class of his students: "Tomorrow you must be the brains of an army. Today you must learn to think." The tendency is toward progressive thinking. But the saying has some modicum of truth in that most developments in military science and art have either arisen during war or have been developed from incidents of war, expanded during an ensuing peace and better prepared for actual use. The World War taught the full value of the machine gun in action and altered formations and changed tactics. The World War produced the tank, the germ of the great progress in mechanization which has subsequently been made in the alert armies of today. The continental wars brought conscription to France and its imitation into Prussia, while the Franco-Prussian War established it in Europe; the World War forced it upon England and the United States, traditionally averse to such an idea.

Wartime training must be at higher speed and is always more effective on account of aroused patriotism; peacetime training is more decentralized and in most armies is largely aimed at the improvement of the officers and non-commissioned officers of the regular establishment to be leaders of larger units and instructors of newer men. It is also aimed toward the dissemination of this training among the civilian population, among yearly "classes" of conscripts, as in France and Japan and Italy, and among volunteer citizens, as in England and America.

Most valuable on a large scale, perhaps, of all training being given is that of citizens in summer camps, as instituted by General Wood in the United States in 1915, and of students in colleges and universities, as initiated in England's Officers' Training Corps in 1908. Annually over 30,000 American youths attend a four-week training camp, where they learn the rudiments of military training. Many of these come back in successive years for advanced and progressive instruction and perhaps qualify for commissions in the reserve corps. Once commissioned, these new appointees have fifteen days of training every three or four years, and they have localized assemblies for instruction and take correspondence courses in tactics. Even those who never return have gained something: at least the rudiments of military training and an orientation which would be of great value in time of war. There are over 377,000 men who have received such training in the United States today. Of course they have not the sure poise or the certain confidence of the regular officer and soldier; but they will at least escape bewilderment and confusion. Similarly, in many schools and colleges there is military training for students, sometimes voluntary and sometimes compulsory, with periods the first two years devoted to general training and the last two years to leadership. Enrolment in a single year reached the figure of about 120,000. These Reserve Officers' Training Corps in the colleges exist, as was said of the English, "to provide officers in time of war" from among the highly educated. The training is conducted at a leisurely rate and bears no relation to the intensity of work, mental and physical, which is undertaken when armies are being raised in time of war.

This type of training is often criticized as intended to "militarize" the country. Those who take this attitude charge that such instruction is not confined to military science but includes teaching of government and citizenship from a militaristic, nationalistic point of view. Defenders of military training in schools and colleges claim that it offers students valuable physical and character training, teaching obedience, respect for law and other elements of good citizenship. Opponents deny the quality of this training. They also object to it on economic grounds, holding that the results obtained, even from a military viewpoint, are not commensurate with the cost.

Other training is that given the "militia" or National Guard units of the various states or counties, in America and in England respectively. It consists in the United States of approximately seventy-two hours of indoor training and of two weeks of outdoor summer training each year. Such training is voluntary; and although it has the benefit of expert guidance by advisers from the regular army, it is naturally neither so arduous nor so thorough and complete as that of the professional soldier. Both reserve officers and National Guard officers are well represented by students at the advanced training schools of the different branches of the service, and so there is uniformity throughout the organization, among amateur as well as among professional soldiers.

In America and in England, then, training is

voluntary and is uneven in progress. Among the regulars it is rigorous, with emphasis on the training of leaders; among the militia or National Guard it is partial, with the idea of maintaining volunteer units capable of expansion and of use soon after war is declared; among the reserve officers and those training to become reserve officers, it is primarily theoretical, aiming to adapt natural and habitual leaders in civil life to military leadership in time of war. In countries like France, Italy and Japan, where service is compulsory, training is complete and thorough by increments, or "classes," which—after their service with the colors—are allowed to go their normal civilian ways, subject only to short refresher recalls to insure retention of soldierly habits and solidarity and continuity of organizations. In short term compulsory or "militia" countries like Australia and Switzerland, training is superficial and brief, oft repeated, without either the immediate effective striking power of a country like France or the wealth of efficient reserve officer instructors such as the United States possesses.

Since the early days of professional armies—those of Frederick William, the father of Frederick the Great, who made of his soldiers a caste apart, with special privileges—there has been a separation of the military from the civil population. This was true in days of strictly professional armies. It was true in the years when soldiers lived at distant colonial or frontier posts, far from home, remote from the opportunity of exercising the suffrage, when personal advancement was by seniority and not by achievement. But it cannot be so true in an army which has such countless contacts with civilian reserve officers as the "nation in arms" type of organization now creates, or in an army like that of the United States with thousands of its officers on "civilian duty" at schools and colleges, with National Guard and reserve units, with garrisons large in size tending to be concentrated at or near population centers, like New York, Boston, Baltimore, San Antonio and San Francisco. Officers and enlisted men of the present are closer to civilian currents of thought than were their predecessors.

Armies of the twentieth century differ in training from their predecessors by the difference of conditions under which they operate; they tend more toward practicality and less toward pomp and parade, more toward intelligence and less toward blind obedience, less toward mechanics and more toward understanding. By these tendencies they conform to the spirit of the times.

ELBRIDGE COLBY

See: ARMY; WARFARE; CONSCRIPTION; MILITIA; EDUCATION.

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MILITIA

CONTINENTAL. The duty of the citizen to defend the homeland against foreign invasion has been recognized throughout history. In the earliest forms of social organization the obligation of military service in time of emergency applied to the entire able bodied male population. With the growth of social stratification

militia service was often limited to freemen or, as in early antiquity, to property owners or the military aristocracy. At the call of danger the citizen soldiers, bringing with them their own arms and equipment, transformed themselves as best they could under the emergency into fighting units. With the conclusion of hostilities the soldiers became absorbed again in their round of civil duties, unconcerned until the next summons with problems of military organization or training. This reliance on untutored skill and native fortitude, although an excellent safeguard of individual and collective liberty, did not prove adequate to the military demands of a more highly organized and ambitious state. Adapted by its very nature to the defense of the locality and depending upon a highly developed sense of tribal solidarity, the technique of the citizen militia was obviously ill adapted to the prosecution of foreign campaigns or to a less cohesive social system. Accordingly among the warring commercial empires of the ancient Mediterranean the lure of material reward was introduced into the conduct of military enterprise to supplement the older ideals of tribal responsibility and patriotism. The wars of antiquity were carried on in the main by well paid, highly trained mercenary armies, which showed themselves, as, for example, in the Second Punic War, greatly superior to the citizen militias which they encountered.

But in a military system predominantly mercenary the older militia technique managed, although in less comprehensive and spontaneous form, to persist in certain areas. Instead of drawing upon the entire population the militia, in the later city-states, for example, was confined to the ruling class; so that militia service, which had come to be fixed at a definite number of years, became a badge of class privilege. In the case of prolonged wars, when the cost of outfitting and supporting the militia was high, wages and equipment were frequently supplied by the government. The persistence of the militia alongside of newer forms of military organization is illustrated particularly in Persia and Sparta, where the militia formed the basis for recruiting standing armies and for the training of reserves. In fourth century Athens the militia was revived temporarily in the period before the Macedonian conquest, while in Macedonia itself the militia was subsequently transformed into a sort of standing army. Early Rome relied entirely on a citizen militia, but as a result of the overwhelming defeat at the hands of the Carthaginians Scipio rebuilt the Roman military machine on a solid foundation of mercenary soldiers. During the final days of the empire the Romans reintroduced the older technique of the colonial militia in the administration of outlying regions.

In mediaeval and modern Europe as a result of the greater persistence of the older tribal ideals of solidarity and liberty the militia tradition found a more congenial soil than in antiquity. The pure militia system prevailing among the German tribes during the early Middle Ages became only gradually distorted by the new feudal military organization and in many localities continued, although in a degenerate form, to exist side by side with the feudal armies. Among the early Slavs and Swabians a modified form of militia was used as a device whereby various sections of the tribe might alternate in the performance of military duty. The growing specialization of function within the social group began to make itself generally felt with the rapid rise of the towns in the late mediaeval period. The great masses of peasants outside the towns withdrew from participation in military activities, which rapidly came to extend beyond the limits of the nation and to be monopolized by adventurers and ambitious knights who placed themselves at the head of mercenary bands bought in the market and kept together by the lure of wages and spoil.

With the spread of mercenary armies during the Renaissance and the rise of standing armies during the later period of enlightened despotism the militia, at least on the continent, sank to a comparatively subordinate position. The steady development of the art of war—as regards both material and tactics—left little place for the impromptu, hand to hand fighting characteristic of early militia warfare; the increasing complexity of commercial and industrial enterprise and the progressive tendency to division and intensification of labor did not permit of the kind of exhaustive training that would have been required to turn a citizen into a soldier of the new model. The militia was thus as a rule delegated to the less ambitious role of local defense, although occasionally larger demands were made upon it; in the eyes of the more progressive experts in the art of war the manoeuvring of the citizen soldiery assumed, as may be judged from the cartoons of Hogarth, a somewhat ludicrous appearance. Yet despite loss of prestige a modified, gradually less amateurish militia persisted, as it had in antiquity, into a more complex era

of warfare and adapted itself to a more elaborate system of military organization. In the fifteenth century France established the "free archers" militia and toward the close of the seventeenth instituted a system of compulsory *milice*, which served as a convenient recruiting agency. Machiavelli inaugurated a militia system in Florence; the shortage of money forced the German princes after the sixteenth century to create throughout their provinces defense units which were essentially militia in character. The Russian *branka* inaugurated by Peter the Great resulted in the spread of local militias, while the Swedish *indelningsverk* and the Dutch *shutterij* were instrumental in keeping alive the older tradition on the continent.

With the overthrow of absolutism in the French revolutionary period it was hoped by many, particularly by the Jacobins in France and Scharnhorst and Gneisenau in Germany, that the triumph of liberty and democracy would mean a return to the older military system based on tribal solidarity and collective responsibility. The concept of the "nation in arms" has resulted by and large, however, in a compromise between the original militia presupposition of general liability to service in time of emergency and the standing army tradition of trained and seasoned troops. In some of the less exposed countries, it is true, the militia is scarcely distinguishable from a standing army, and the standing army from a militia: in Norway the militia system provides a permanent military nucleus, while in Sweden the standing army is recruited on a short term basis. In general, however, on the continent the combination of standing army and conscription, which has prevailed since the nineteenth century, has been violently attacked by liberal and socialist champions of the spirit of the pure militia. Bebel in Germany and Jaurès in France, realizing the dangers of a centralized, absolutistic control of the military strength of the nation, won over their parties to the militia system, which for them constituted a transition to the complete abolition of all military organizations. In the antidemocratic regimes which have sprung up in the wake of the World War proletarian or Fascist militias have been introduced as props for party dictatorship. The Italian militia forms a section of the regular army and serves not only in maintaining domestic order but also in training the youth of Italy and in continuing the education of those who have served in the army. Besides the Fascist militia there is in addition a corps of vigilantes, which may be viewed by a considerable stretching of the term as a remote variant of the militia type.

It is only in countries enjoying a high degree of geographical isolation or which have been politically neutralized that the militia proper has been able to maintain its prestige and vitality down to the present day. On the continent mountainous regions like those of Switzerland and Illyria have been particularly conducive to its perpetuation. Thanks to its political neutralization Switzerland affords in its federal army the only present day example of the pure type of militia. There are no permanent units and only a very small corps of professional officers. In peace time the troops are called only for training purposes or in case of civil disturbances. It is regarded as a patriotic duty to give the youth of the country a military education.

PAUL SCHMITTHENNER

ANGLO-AMERICAN. As defined by Adam Smith a militia is composed of men who "join in some measure the trade of a soldier to whatever other trade or profession they may happen to carry on." In Anglo-Saxon countries the militia has symbolized to a unique degree the tradition of local authority and individual liberty. The spirit of the militia has been repeatedly invoked, especially in England and the United States, against threatening manifestations of militaristic dictatorship or centralized authoritarianism. Service in King Alfred's fyrd was as a rule restricted to local counties, save in cases of actual invasion. County and parish were responsible for quotas, not the individual for service to the crown. Units were regulated in the counties, officered by landowners and their relatives.

The "home and hearth" idea has persisted. Toward the close of the mediaeval period the militia was revived to supplement the mercenary and standing armies which were fighting England's wars on the continent. The political isolation which England enjoyed by virtue of her insular position enabled the dual system to persist into a period which on the continent witnessed the gradual decay of militias. With the spread of British colonization the militia took firm root in the New World. The Military Company of Massachusetts, subsequently known as the Ancient and Honourable Artillery Company of Massachusetts, formed in Boston eight years after the arrival of the Puritans in Massachusetts Bay Colony, represents the earliest transferal to the new soil of the older English institution. As

in the Guild of St. George, chartered by Henry VIII a century earlier, the time honored features of local control and voluntary service were strictly observed. In contrast to continental practise the ideal of voluntary service has been perpetuated. Organized militia units continued to be filled with men who served freely. Other citizens liable to service were called unorganized militia.

So thoroughly was the idea implanted that militia were state troops for local defense only that at Detroit and on Lake Champlain in 1812 they declined to cross the Canadian border. The act of the newly created United States Congress in 1792 establishing a federally controlled militia was never enforced because it envisaged universal compulsory enrolment, although not training, and enforcement was left to the states, which preferred selected men voluntarily enrolled. Militia regiments remained state units: Seventh New York, Fifth Maryland, Eighth Massachusetts. Commissions were from the governors. The protracted controversy between the North and the South over determining the boundary between federal and state sovereignty brought to the fore with added intensity the question of militia control, and during the Civil War itself the older local tradition made it difficult at times for the southern government to concentrate its man power. A Confederate court in Georgia, reechoing the very spirit of the Anglo-American tradition, defined the militia as a "body of citizens enrolled for military discipline. They are enrolled by state authority with reference to state boundaries, they are organized, officered and disciplined by state authority. . . . They are not separated from the mass of their fellow citizens nor withdrawn from their ordinary pursuits, save occasionally for drill or for special and usually short service in the field. . . . They can not be used in offensive war on foreign soil" [Jeffers *v.* Fair, 33 Ga. 347–49 (1862)]. In 1862 Governor Brown refused to allow the militia to leave the state, preferring to keep them at Savannah for local protection as a "monument to Georgia's sovereignty."

The constitutional right of the federal government to "raise and support armies" by volunteering or draft for oversea service is separate and distinct from the limited right "to call forth the militia" in cases of rebellion or invasion [Cox *v.* Wood, 247 U. S. 3 (1918)]. The congressional act of May 27, 1908, empowering the president to call out the militia for service within or without the borders of the United States when such service is deemed necessary was promptly declared unconstitutional by the attorney general (29 Ops. Atty. Gen. 322). Nevertheless, and despite the theoretical validity of this distinction, exigencies of military emergency have often necessitated the utilization of militia units for foreign campaigns. Man power is man power. If organized and trained it is likely to be used. Popular excitement transforms home troops into oversea campaigners. During the Napoleonic wars the British Parliament passed special acts permitting the militia to go to France under their own officers. In the Crimean War British militia garrisoned not only home forts but also some in the Mediterranean, releasing regulars for service in Russia. A fifth of the British militia went to south Africa in 1900 as separate volunteers, just as American militiamen volunteered for Mexico in 1846 and for Cuba and the Philippines in 1898. In 1918 American militia, "federalized," were in the vanguard of American troops arriving in France.

In 1871 British militia control passed from counties to the crown, and ten years later the militia was affiliated with line regiments save for limitations on service. In 1908 organized British militia practically disappeared, although the legal obligation to service in time of emergency persisted in theory. Since the World War the territorial army recruited in the counties and officered by graduates of officers' training corps functions as a voluntary militia for service abroad as well as at home.

In 1903 the American militia was allied to the regulars, but tradition triumphed and the alliance was loose. Two years after the World War the United States recreated state units with local controls and loyalties and flatly refused to form a "national" militia. The older term "militia" has tended, however, gradually to disappear, being replaced by "National Guard." Volunteer state units persist with training supervised, arms provided, pay for drill nights furnished, by the federal government. They are frequently called by their own states for short service to prevent lynchings or to subdue strike disorders when local police seem impotent. They are said to form a "component" of the army of the United States, are brigaded into the vaster organization, urged to accept federal reservist obligations in addition to state obligations and considered as early available troops in many mobilization plans. But despite these adaptations of an older institution to the demands of a more intricate system of military administration the ancient

Anglo-Saxon ideal of armed citizens under local control is still operative.

ELBRIDGE COLBY

See: ARMY; WAR; MOBILIZATION AND DEMOBILIZATION; ARMED FORCES, CONTROL OF; CONSCRIPTION; MERCENARY TROOPS; MILITARY TRAINING; NATIONAL DEFENSE; STATES' RIGHTS; REGIONALISM; MARTIAL LAW; POLICE; ARMS, RIGHT TO BEAR.

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MILK SUPPLY. Milk is an indispensable item in the diet of infants and many adults. Thus an adequate supply of pure milk is a matter of public concern, particularly to urban dwellers. Milk, however, is one of the most perishable of foods, and scientific research has shown the potential danger of milk as a carrier of disease when not produced and handled under sanitary conditions. In 1842 Robert M. Hartley suggested that unsanitary and adulterated milk was an important cause of the high infant mortality in cities of the United States. Even though many regulations and sanitary measures have been adopted, state health officers during the years 1924 to 1929 reported 258 epidemics of disease caused by contaminated milk, resulting in 10,906 cases of illness and 371 deaths.

The milk problem was not serious when most of the population lived on farms or in small towns and villages. Milk was provided by the "family cow" or obtained from nearby producers. With the growth of large cities, however, the problem of obtaining a satisfactory supply of milk increased.

The first shipment of milk to New York City by rail is reported to have been from Orange county in 1842. At that time the major part of the city supply came from dairies in or near the city, where a low standard of sanitation prevailed. Massachusetts took the lead in enacting regulations to improve the milk supply. In 1856 it prohibited adulteration; in 1859 it prohibited the feeding of distillery waste. It was not, however, until 1882 (in Newark, New Jersey) that specific legislation for dairy inspection was passed.

Since the milk supply problem is most acute in large cities, municipal legislation shows the trend toward regulation and control of the milk supply in order to protect the public welfare. In New York City beginning about 1873, when Dr. Jacobi advocated pasteurization as a hygienic measure, private agencies and individuals carried on a steady campaign for clean pasteurized milk despite the opposition of dairy interests. The work of Nathan Straus, who established milk stations for infants of poor families in New York City, was of great significance in this movement. In 1896 the regulations of the New York City Board of Health, which had been concerned only with the detection and prevention of adulteration, were amended, giving a more comprehensive definition of adulterated milk and providing for the sale of milk through a system of special permits. In order to improve the sanitary conditions under which the city milk supply was produced and handled, a system of inspection of dairy farms and country milk plants was started in 1906. In 1911 the

city regulations were extended to include a definition of pasteurization and a system of grading milk according to bacterial content, butter fat content and methods of production. In 1926 there was instituted a rigid enforcement of the requirement that all Grade B milk be pasteurized, and finally in 1931 the Milk Commission of New York City recommended prohibiting the sale of unbottled milk to consumers.

The gain in hygienic conditions is indicated by the fact that in 1906 only 5 percent of the milk consumed in New York City was pasteurized as compared with 98 percent in 1921. Public regulation in other large cities has followed similar lines. In small cities and rural areas requirements for pasteurization have lagged. There is a lack of uniformity in state and municipal ordinances with regard to standards for milk and cream which often results in the diversion of low quality milk to the municipality with the lower standard.

The federal government has supplemented municipal and state regulation. The Food and Drugs Act, first enacted in 1906, contributed only slightly to federal inspection of milk or cream and to the development of uniform standards. In 1923, at the request of the Alabama State Board of Health, the United States Public Health Service initiated a milk sanitation program which was soon adopted by other sections of the country and which led to the formulation of a standard ordinance in 1926. In August, 1931, the ordinance was in operation in 442 municipalities located in 25 states, but it was estimated that a large amount of the milk sold in the United States failed to meet its requirements. In 1927, because of the large imports of fresh milk and cream from Canada, the Lenroot-Taber Act was passed requiring inspection of Canadian dairies and plants shipping milk to the United States. Increased tariff rates and heavier production in the New York and Boston areas curtailed imports of fresh milk and cream, which dropped from 30 percent of the total imports of dairy products during the ten-year period 1921 to 1930 to 2 percent in 1931.

As a result of higher standards of quality and sanitation, improvements in transportation and refrigeration, and educational campaigns by state and federal health departments, child welfare institutions and the dairy industry there has been a marked increase in the consumption of milk. For New York City the per capita increase over 34 years (1890–1924) was 85 percent, and only recently, because of the economic depression, has there been any marked decrease. The average annual milk production in the United States in the 3 years 1929 to 1931 was estimated at 103,000,000,000 pounds, 32 percent being used as fluid milk and cream by the non-farm population; about 25 percent was used on farms and 43 percent in the manufacture of dairy products, exclusive of farm butter. During the years 1924 to 1930 the gross farm income from milk averaged $1,865,000,000, or 16 percent of the gross farm income from all crops and livestock combined.

The consumption of milk varies widely, by geographic regions, by nationality and by income. In 1931 the daily per capita consumption of milk in cities and villages in the United States was estimated at .88 pints per day. In the north Atlantic states it was .99 pints per day, in the north central states .92 pints, in the south Atlantic states .65 pints, in the south central states .68 pints and in the western states .87 pints. A study of the consumption of dairy products in Boston indicated that per capita consumption of milk was highest in Irish, German, native white, English and Scotch and Jewish families. The lowest per capita consumption was in Negro and Italian families. Some studies have indicated a relationship between milk consumption and income. In Austin, Texas, the per capita consumption in the highest income group of the white population was 50 percent greater than in the lowest and two and one half times as much as for the colored population. The Children's Bureau has estimated that about one third of the children in the United States are undernourished because of lack of milk. The New York State Milk Commission in a survey made in 1930–31 of 31,500 poor families, including 89,500 children, found that 51 percent of the families used unbottled milk. Since the depression beginning in 1929 there has been a shift from bottled to loose milk, a lowering in grade and also a decrease in quantity used.

In isolated regions and in army, construction, mining and lumber camps, dried milk and evaporated milk are used to a large extent instead of fresh milk and cream. Marco Polo mentions the use among the Mongols during the thirteenth century of dried milk prepared by a heating process. Condensed milk and evaporated milk were introduced into the United States in 1857 and used extensively during the Civil War. The manufacture of dried milk in its modern form is largely a development of the twentieth century. The consumption of condensed and evap-

orated milk is relatively small as compared with that of fresh milk and cream. In 1930 the per capita consumption of condensed and evaporated milk on a milk equivalent basis was 36 pounds compared with about 350 pounds of fresh milk and cream. Of the total amount of milk used in the manufacture of dairy products in the period 1921 to 1930, condensed milk required about 1 percent, evaporated milk 6 percent and powdered whole milk, powdered cream and malted milk less than .5 percent.

Per capita consumption of milk is highest in Finland, Switzerland and Sweden and lowest in Chile and Japan.

PER CAPITA CONSUMPTION OF WHOLE MILK PER YEAR IN VARIOUS COUNTRIES

COUNTRY	YEAR	GALLONS
Finland	1928	83.9
Switzerland	1927	70.4
Sweden	1914	69.7
Norway	1927	56.0
Canada	1927	51.0
Czechoslovakia	1928	45.8
Austria	1926	45.0
Netherlands	1927	42.7
United States*		
non-farm population	1931	40.0
New Zealand	1927	37.4
Australia	1926	37.1
Great Britain	1927	23.0
Germany	1928	27.3
France	1928	25.0
Denmark	1927	22.0
Spain	1925	13.8
Chile	1927	7.2
Japan	1926	0.4

* United States, Department of Agriculture, *Milk and Cream Consumption in Cities and Villages* (mimeograph release, December 8, 1932).

Source: White House Conference on Child Health and Protection, Sect. II, Public Health Service and Administration, *Milk Production and Control* (New York 1932) p. 201.

In general it is true that no other country has approximated the high standards and proportion of pasteurized and bottled milk and delivery service of the United States; Great Britain and Denmark rank highest in Europe. Pasteurization is not compulsory in London. In Germany about 30 percent of the milk is pasteurized; the proportion varies with the size of the city. In Berlin 99 percent is pasteurized and special regulations are enforced for the handling of infants' milk, which amounts to about 3 percent of the total city consumption. In Germany double pasteurization of milk is common, in contrast with the United States, where double pasteurization is prohibited. The lowest standards of regulation and pasteurization prevail in Paris; recent complaints that at least 45 percent of the milk supply is adulterated have led to a campaign for a better system of control.

With the growth of urban population and increased per capita consumption, city distributors have had to reach out farther and farther for sources of supply. In New York City in 1927 only 63 percent of the approved Grade A and Grade B milk was received from plants within the 300 mile freight zone; some shipments came a distance of 500 miles. No other city has such a wide radius of supply. For London it is 300 miles and for most of the other large cities decidedly less. In recent years truck shipment has supplemented that by rail. This is especially true for short hauls, where transportation costs by truck are only 60 to 70 percent as high as by rail. Over half of the milk receipts at Philadelphia in 1929 were truck receipts. In European cities, where short hauls are more common, the truck is a still more important factor. Improved roads and the replacement of horses by motor vehicles have increased the distance that milk can be economically delivered to plants. Because of this development it has been found advisable to discontinue many country plants.

Since milk is an essential food and perishable, it is necessary to have an adequate supply each day in the year. Seasonal shortages and surpluses in city milk supplies are due in the main to the wide seasonal variation in production. The public will not tolerate a sharp rise in prices even in cases of shortage. Even at stationary prices, demand for fluid milk and cream is affected by holidays, by the day of the week, by temperature and by the vacation movement from cities. Supplies also vary from day to day. With these variations in demand and supply dealers in some markets prefer to have a surplus over fluid needs of about 20 percent. Under current health regulations it is more expensive to produce and handle milk suitable for fluid use than for manufacturing use; and milk used for fluid purposes returns more money than that used for manufacturing purposes. Milk in excess of fluid requirements can be sold only in manufactured form in competition with products produced at lower cost.

Another important factor affecting the shortage and surplus of milk is the cycle in prices of dairy cattle, which is 14 to 16 years long. The price of dairy cows at the peak of the cycle has been about 50 percent higher than in the periods of low prices. When prices of cows are high,

farmers raise too many heifers; when prices are low, they raise too few. The shortage of milk in the New York milk shed in the fall of 1927 and 1928 was a result of raising too few heifers when cattle prices were low.

Milk production is affected by the relationship of milk prices to feed prices. When milk prices are high in relation to feed prices, farmers tend to feed more heavily and milk production is increased; when milk prices are low in relation to feed prices, they tend to curtail feeding. For some areas milk production tends to lag about 8 months behind the milk-feed ratio.

Regulations of city boards of health as to the care and handling of milk in order to insure a safe supply make the capital cost of retail distribution high and tend to concentrate the distribution in the hands of a relatively few organizations. In Detroit, Michigan, prior to the enforcement of the pasteurization ordinance there were 158 milk dealers; three months after the ordinance became effective there were only 68 plants.

Because of the concentration of city distribution into relatively few hands, farmers have little choice of markets for their milk and in many instances have found it advisable to organize for collective bargaining. One of the first organizations of producers was set up in Orange county, New York, in March, 1883, and in the same year waged a milk strike. The majority of the producers' associations, which in 1928 marketed about two fifths of the milk sold, were of postwar origin. By virtue of their bargaining strength and their successful use of strikes between 1916 and 1920 some producers' organizations became involved in legal proceedings because of their alleged violation of the antitrust acts. With the passage of the Capper-Volstead Act of 1922 it was made plain that producers are free to act together along normal business lines in the collective handling, processing and marketing of their agricultural products, with respect to interstate or foreign commerce.

The National Cooperative Milk Producers' Federation formed in 1917 was instrumental in the passage of this act. This organization, which in 1928 included 45 of the largest cooperatives, does not engage in business but is active in disseminating information and in working for legislation favorable to its membership.

There are in general two types of producers' cooperatives—bargaining associations and marketing, or operating, associations. Most of the producers' cooperatives were organized originally as bargaining associations to serve as intermediaries between farmers and dealers in matters of price adjustment. In 1928 bargaining associations were to be found in Boston, Hartford and other Connecticut cities, Philadelphia, Pittsburgh, and Baltimore. The advantage of this type of organization, which as a rule does not actually handle the milk, is that it requires a small amount of capital; on the other hand, it has no centralized control over its membership. The second type, the operating, or marketing, association, handles all or part of the milk, often engages in manufacturing and in some cases retails milk. Such cooperatives, which require large amounts of capital, are represented by associations in New York, Cleveland, Cincinnati, St. Paul and Minneapolis and are also typical of some European associations. These associations vary greatly in size. The largest, the Dairymen's League, Inc., had about 52,000 members in 1932 located in New York and five adjoining states. Producers' organizations in the United States have not been generally successful in retail distribution because of the high capital requirements and keen competition; it is estimated that they do less than 1 percent of the retail milk business in the United States.

Various price plans have been developed to facilitate bargaining between producers and distributors. The first price plan used was a flat price system, in which one price was paid for all milk received and no allowance was made for the fact that some dealers sold a larger proportion for fluid use than others and therefore received a higher average return. With the decline in 1920 in the price of manufactured dairy products, those distributors who had a large volume of surplus pressed for a change. During the period 1920 to 1923 many price plans were adopted, which may be classified into three general types: the classification, or use price, plan, the basic surplus plan and the combination price plan.

Under the classification plan milk is sold to distributors and manufacturers at a series of prices based upon the market returns from the milk from each use. Returns from the sale of milk at the different prices are pooled and an average price is determined for all milk sold. Under the basic surplus plan the producer receives a relatively high price for a certain uniform production of milk and a lower price for the surplus over the uniform production, thus offering a price incentive to maintain a uniform production. The combination price plan at-

tempts to combine the features of the other two: each distributor buys milk on a classified basis, while different prices are paid producers for basic and surplus milk. These plans or variations of them are employed also in European cities.

Milk is sold at retail through both the delivery wagon and the store, and in some cases the difference in price is as much as 2 cents per quart. A classification of sales of milk in February, 1927, of a group of dealers in the New York metropolitan area showed that 54 percent of the milk was sold in bottles on retail routes and 9 percent in bottled form to stores. The remaining 37 percent was sold in bulk, 19 percent to stores to be resold as dipped milk and 18 percent to restaurants and hotels.

Since milk is so essential as a food, retail milk prices are of public interest and the subject of much discussion. Brown's studies in Chicago for the year 1925–26 showed that the consumers' purchase price per quart averaged 12.9 cents. The cost of the milk to the distributor was 5.3 cents, or 41 percent of the retail price, leaving a gross margin of 7.6 cents, out of which 7.1 cents went into processing and sale. In 1925 the average price to the consumer in New York and Pittsburgh was 14.4 cents. Of this 5.7 cents, or 39.6 percent, went to the producer; 2.25 cents, or 15.6 percent, to the receiving plant and for pasteurization and bottling; 1.85 cents, or 12.8 percent, for transportation charges; 4.2 cents, or 29.2 percent, for sale and delivery, leaving a net profit of .4 cents. The margin between producers' returns and retail prices is not a measure of marketing costs, because this margin is affected by the relative amounts of the milk used for fluid use and for manufacturing use. The margin is affected also by the distance the milk has to be shipped. The increase in sanitary requirements and in distributive services has tended to widen the margin.

Many proposals have been made for a better organization of the milk industry. It has been argued that, because of the public need for a regular supply of milk at reasonable prices and the necessity of assuring its purity, the milk business should properly be considered as a public utility. There have been at least two experiments in this direction. The city of Portland, Oregon, passed an ordinance in September, 1931, requiring milk dealers to file prices with the city auditor as well as to give seventeen days' prior notice of any intent to change prices. In 1932 the province of Manitoba, Canada, authorized the Public Utilities Board of the province to control the buying and selling of milk in case producers and distributors could not agree upon a fair price. Municipal ownership and operation has been proposed but has not yet been tried in the United States or Canada. Another suggestion has been the formation of a privately owned but publicly regulated monopoly. Since it would involve government fixing of prices and profits, this plan has not been received with enthusiasm in the United States, although from 1914 to 1919 at least ten such proposals were made by official committees set up to study the problem. In Germany, partly as an outgrowth of wartime government control, many cities have entered the field of wholesale distribution by establishing "stations" for fluid milk. Ownership may be either wholly municipal or vested in a mixed corporation in which the city owns a share.

In addition proposals have been made for the zoning of cities to eliminate duplicate routes and organization of consumers. Consumers' organizations have not been as successful in the United States as in some foreign countries. A form of public control often discussed in periods of crises in the industry is the establishment of milk arbitration boards to fix prices and standards. In February, 1933, a bill was introduced in the New York state legislature providing for the setting up of a milk control board with plenary power over the supervision and regulation of all phases of the milk industry including production and sale, thus protecting the interests of the consumer without eliminating private enterprise. Similar measures are being discussed in New England and in the middle west.

EDMUND E. VIAL

See: DAIRY INDUSTRY; AGRICULTURAL COOPERATION; FOOD INDUSTRIES, section on FOOD DISTRIBUTION; COMMUNICABLE DISEASES, CONTROL OF; CHILD, section on CHILD HYGIENE; NUTRITION.

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MILL, JAMES (1773–1836), British writer and philosopher. Mill was the son of a Scottish shoemaker and was educated at the University of Edinburgh. Licensed as a preacher he manifested slight interest in this calling and in 1802 he went to London in the company of Sir John Stuart, a member of Parliament from Scotland. After some years of struggle to support himself and his growing family by literary work on political and economic subjects Mill gradually attained recognition. In 1808 he became acquainted with Jeremy Bentham, a fact which was of primary importance for the careers of both men. Mill's long visits at Bentham's country house gave him the opportunity to complete his large *History of British India* (3 vols., London 1817; 5th ed., 10 vols., 1856, vols. vii–ix by H. H. Wilson), which he had begun in 1806. The fame which he achieved through the publication of this work, the first ever to have been written on the subject, led to his being appointed in 1819 to a post at India House, where he remained for the rest of his life. But Bentham's friendship meant more than this to Mill, for it meant that he settled down at Bentham's side as his lieutenant and propagandist in chief, writing articles and pamphlets and making friends with all the leading reformers of the day. Bentham provided him with a doctrine, and he provided Bentham with a school.

Bentham before he met James Mill had been known in England as an unsuccessful philanthropist; as a law reformer he was known abroad only and this thanks to the exertions of his Swiss editor, Dumont. Mill now turned him again into an English writer and shifted Bentham's preoccupations from law and legislation to political philosophy. At the same time, particularly in his own version of Benthamite doctrine, Mill incorporated the economic teachings of Malthus and Ricardo, with the latter of whom he was on special terms of intimacy. It was under Mill's pressure that Ricardo wrote his *Principles* (1817); and Mill's own *Elements of Political Economy* (London 1821, 3rd ed. London 1826), which is noteworthy as the first English textbook on economics, is largely an interpretation of Ricardo's views.

Of fundamental importance for English political and social history was Mill's conversion of Bentham to an interest in political problems and particularly to the championship of universal suffrage. It was this conversion that was responsible for the formation of the powerful group, or coterie, of reformers known as the philosophic radicals, so called because their radicalism was consciously based upon an intellectual system, itself founded upon the ethical principle of "utility" and the psychological principle of the "association of ideas."

It was in the effort to clarify the psychological and philosophical base of the Benthamite doctrine of utilitarianism that James Mill published his *Analysis of the Phenomena of the Human Mind* (2 vols., London 1829; new ed. by J. S. Mill, 2 vols., 1869). Although the fundamental

ideas are derived from Hobbes and Hartley, the publication of this work marks the beginning of the modern school of associationist psychology.

Intellectually Mill was a borrower of ideas, not an original thinker. He was a lucid writer endowed with an indomitable Scottish will and a fanatical devotion to what he assumed to be the truth, and under his leadership there had arisen one of the most efficient groups of reformers which modern Europe has known. He had also, through years of methodical and strenuous teaching and training, aimed at and partially succeeded in giving to the world a living specimen of the perfect Benthamite—his son, John Stuart Mill.

ÉLIE HALÉVY

Consult: Bain, A., *James Mill* (London 1882); Morley, John, "The Life of James Mill" in *Fortnightly Review*, vol. xxxvii (1882) 476–504; Halévy, Élie, *La formation du radicalisme philosophique*, 3 vols. (Paris 1901–04), tr. by M. Morris as *The Growth of Philosophic Radicalism* (London 1928) p. 249–310; Stephen, Leslie, *The English Utilitarians*, 3 vols. (London 1900) vol. ii; Cannan, E., *History of the Theories of Production and Distribution* (3rd ed. London 1917); Mill, J. S., *Autobiography*, with introduction by H. J. Laski (new ed. London 1924).

MILL, JOHN STUART (1806–73), English social philosopher. He was the son of James Mill, editor, author, utilitarian and professional parent. He was educated at home; entered the India Office as a clerk in his late teens, serving as its chief from 1856–58; was later a member of Parliament for a single term of three years; and when the India Office was merged with another department he retired upon pension. Until his retirement his days went into his official work. In his twenties his leisure was given to promoting utilitarian and speculative debating societies and in writing for the *Westminster Review* and other periodicals. As he advanced in years a succession of studies concerned with man in his relations to society claimed his spare time. He never visited India; and his active contact with the world of affairs was from the desk of the civil servant and the seat of the philosopher.

Mill was, almost literally, the child of philosophic radicalism. He was, as few men of eminence are, the product of the deliberate educational craft of his father. He was exposed to only such aspects of the impinging culture as his father chose for him; his capacities were shaped into his personality through influences consciously selected by his father. At unbelievably early ages he was introduced to the formal discipline of the classics, of algebra and geometry, of syllogistic logic and of speculative thought. In his teens he became well versed in all that English liberals were reading back into the literature of the ancient republics. He passed over Spenser and Shakespeare, was schooled to avoid books on theology as if they were fairy stories and steeped himself in the histories of the great Enlightenment. He was made acquainted, alike through his father's personal circle and the printed page, with the once heretical doctrines of Adam Smith, Jeremy Bentham and the Manchester school. His world was one of tomes, of pamphlets and of polemic; whatever the subjects of the books he read and however wide their range, they were all variations upon the same grand theme; to him they revealed the nobility of the social order which liberty guided by reason would make possible.

A ready made education is rarely a neat fit, and the elder Mill had taken no accurate measurements of the boy's latent capacities. A clash of some sort between the raw human stuff and the mold in which it was cast was inevitable. An emotional crisis came in the late twenties, from which John escaped by something much like "a Methodist conversion." In 1836 his father's death brought to him a measure of personal freedom. And his marriage in 1851, after the death of her husband, to Harriet Hardy Taylor, whose friendship he had cherished for twenty years, strengthened the force she exerted upon his thought. She had little influence upon the technical practise of his literary craft but much to do with his emotional attitude toward his subjects of study. Such influences made him sensitive to the amenities of existence and to spiritual values; they tended to humanize his mighty labors for the common good; but they came belatedly to a Mill who was already settled into his life. All the editing of opportunity, conflict and Mrs. Taylor could only revise the edition of himself of which his father was author.

Although he took up subject after subject as his interest dictated, Mill's great intellectual task was an inheritance. It was his sacred office to give definitive statement to the advanced thought of liberalism which was just attaining respectability. For this work he was well equipped by knowledge, conviction and a superb mastery of the technique of the system builder. So with utility as the guide, reason as the means and fundamental principles as the expression he

gathered up from far and wide fragments of thought and doctrine—from his father and Bentham and all the philosophical radicals, from Coleridge, from the classical economists, from Comte and Saint-Simon and de Tocqueville—and welded them into a comprehensive and articulate whole. Mill was no intellectual pioneer; but in an enterprise of this kind there is scant place for novel idea or startling hypothesis. As an intellectual structure his edifice is hardly comparable with that of an Aquinas or a Kant. But it served its cause well enough and stands today as the great literary expression of English utilitarianism.

It happens, however, that the man is mightier than the scholar. As Mill proceeds from book to book the integrity of his system is increasingly threatened by his own emotional convictions. He continually commits himself to advanced causes and policies faster than he can bring up his intellectual resources or find places for them in his system of thought. In the *Logic* he stands by "deduction," which to him has been the very way of thought, but tries to combine with it an "induction" which science and progress alike demand, and is powerless to effect the reconciliation. In the *Political Economy* he has really written two books, easily distinguished—the one an elaboration of the mechanistic scheme of Ricardo, the other an account of the diverse industrial usages under which peoples live. In the celebrated chapter upon the province of government (bk. v, ch. xi) he lays down the general principles of non-interference and smothers them beneath an avalanche of exceptions. The later and more matured essay *On Liberty* is the classic plea for individual freedom and the inarticulate confession of the necessity for control. The libertarian thought he expounded provided no basis for a resolution of the paradox of liberty and the state. In a half shelf of treatises, which stretches away from *A System of Logic*, by a man raised upon it, through political economy, representative government, the Irish question and woman suffrage to a series of *Essays on Religion*, by one who had always professed to overlook it, the diminuendo and the crescendo are quite apparent. In the pages of Mill the forces of disintegration are already present in a philosophy of utilitarianism which is receiving its authoritative statement. Mill set out to elaborate individualism into a system of thought and in the process became as much of a socialist as a pre-Marxian could be.

Against the kaleidoscopic background of hurrying events, this man of books who always dressed in black stands out as one of the most eminent of the Victorians. He conformed to the prevailing intellectual fashions, went in for system building, wrote in the grand manner and had so happy a command of his technique as to throw an adequate protective coloring about his thought. So compelling was his accomplishment that a full generation passed before inquirers dared again to address themselves freshly to the subjects upon which he had come to be an authority. It was not until the notions of "dynamics," growth, organism and the social process had blundered their way into the discipline with which he was concerned that his influence and prestige began seriously to wane. It would be easy to eliminate from his books the emotional commitments which produce confusion, and thus to make of these distinguished volumes the clear cut, logical, uncompromising, articulate statement of utilitarianism that Mill would have them be. But that would rob his contribution of its distinctive value as a document in the history of thought; and it would deny to Mill the man the authorship of his own works.

WALTON H. HAMILTON

Principal Works: *Autobiography*, ed. by John Jacob Coss (New York 1924) and by Harold J. Laski with introduction (London 1924); *Letters of John Stuart Mill*, ed. by Hugh S. R. Elliot, 2 vols. (London 1910); *A System of Logic, Ratiocinative and Inductive*, 2 vols. (London 1843, 9th ed. 1875); *Essays on Some Unsettled Questions of Political Economy* (London 1844, 2nd ed. 1874); *Principles of Political Economy*, 2 vols. (London 1848; new ed. by W. J. Ashley, 1909); *On Liberty* (London 1859, 3rd ed. 1864); *Dissertations and Discussions, Political, Philosophical and Historical*, 4 vols. (London 1859–75); *Considerations on Representative Government* (London 1861, 3rd ed. 1865); *Utilitarianism* (London 1863, 2nd ed. 1864); *An Examination of Sir William Hamilton's Philosophy* (London 1865, 5th ed. 1878); *Auguste Comte and Positivism* (London 1865, 3rd ed. 1882); *The Subjection of Women* (London 1869; new ed. by Stanton Coit, 1906); *Three Essays on Religion* (London 1874, 2nd ed. 1874).

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MILLES, THOMAS (*c.* 1550–*c.* 1627), British economist and customs official. Milles was born in Kent and entered public service about 1570. He was frequently sent to France, Flanders and Scotland and took part in the negotiations at Berwick in 1586. In 1579 he was made bailiff and from 1586 to 1623 was customer at Sandwich. Milles is the leading representative of the English bullionists. His chief work is *The Customer's Apology, that is to say a Generalle Answer to Informers of all Sortes* (London 1601, abridged ed. 1602), in which he defends the staple system as preventing usury and permitting free enterprise and inveighs against the "particular companies and private societies." When Wheeler countered the attack in his *Treatise on Commerce* (1601) Milles issued *The Customers Replie or Second Apologie: that is to say, an Answer to a Confused Treatise of Publicke Commerce printed and dispersed at Middlebourghe and London in favour of the Private Society of Merchants Adventurers. By a more serious Discourse of Exchange in Merchandise and Merchandising Exchange. Written for understanding Readers only, in favour of all loyall Merchants and for the Advancing of Trafficke in England* (London 1604). In this work he accused the merchants adventurers of practising "a meer foeneration" and a "temerarious alteration of public coynes, through corrupt and crafty exchanges and commutation of money." In 1606 he published *A Caution against Extreamity by Farmers* and *The True Use of Port-Bandes*, of which no copies have survived. In 1608 appeared *The Customers Alphabet and Primer. Conteining theire Creede, theire Ten Commandements and Forme of Prayers. Togither with a Pertinent Answere to all Such as would faine perswade others that the bringing home of Traffique must needes decay our Shipping.* In this he also discusses taxes, preferring those which are "squared out to the generalitie, certaintie and indifference of the lawes." In the same year he published *Acroamata (for Bullion and Staples) that is to say: Private Lessons speld out of a Customer's Late Alphabet and Primer.* In 1609 he reissued *The Customers' Apologie to be read more at large in Thesauraris Bodleyano Oxony. Heere only abridged, paraphrased and fitted into the written Table or Epitome of all his other Workes touching Trafficke and Customes.* In 1611 appeared *The Misterie of Iniquity plainely layd open by a Lay-Christian, no profest Divine, out of Truth in Humanity and Rules of Naturall Reason. Whereby the World may See, Read and Understand the Proud and Vaine Comparison of a Cardinalle's Red-Hat and King's Golden Crown. Alwayes provided in Reading, Read all or Read Nothing at all.* In this he laments that the old time "religious and honest collectors and customers" should now be "out of Favor, as objects of Disgrace and Publick Slaunder," and should be supplanted "through ignorance and impudency" by "Comptrollers, then by Supervisors lastly by Farmers and Undertaking Huxters, besides Searchers and Wayhers, God knowes how many." In 1612 appeared *An Out-port Customers Accompt of all his Receipts, wherein he plainely sets downe, as well the Motives and Occasions, as the Method and Style of all his former writings. All of which are heere fitted to Capacity of Common Sense and Reason. With an open Declaration of the Mystery, itself, to perfect this Accompt.* Finally in 1619 he published *An Abstract almost Verbatim with some necessarie Addition of the Customer's Apologie written 18 years ago to shew their Distresse in the Out-Ports as well as through want of Maintenance and Meanes to heare out their Service; as Countenance and Credit in regard of Others.* This was intended, as a manuscript note by the author states, "for an answer to the Merchants, Burgesses for London at the last abrupted Parl. 1614," who "calls all men Enter-lopers that are not of their Conclaves or private Commonwealth."

EDWIN R. A. SELIGMAN

Works: Copies of some of Milles' works are to be found in the Bodleian Library at Oxford, in the British Museum and in the Seligman library at Columbia.

Consult: Hewins, W. A. S., in *Dictionary of National Biography*, vol. xxxvii (1894) 434–36.

MILLING INDUSTRY. Flour milling has been practised since primitive man spread his grain upon a convenient boulder and crushed it with a rounded stone. Grinding succeeded crushing when there was developed the saddle stone over which another stone, shaped somewhat like a rolling pin, was rolled back and forth. Milling assumed a still more modern form with the invention of the quern in about the second century B.C.: here two flattened stones were employed, the grain being crushed as the upper stone revolved upon the nether. A further step was the use of millstones in the slave and cattle mills of the Roman Empire: a cone shaped nether millstone was capped by a stone shaped somewhat like an hourglass, the upper half forming a hopper; these heavy stones were turned with long bars fixed into sockets in the upper stone and were propelled originally by slaves and later by horses or asses.

The Greeks are said to have invented the water mill, but its first known use for grain grinding can be traced only to the fifth century A.D. The earlier type of water mill had a horizontal water wheel; this was superseded in the eighth century by the more efficient vertical wheel. Probably at first the wheel was turned only by the current of the stream; later the fall of the water was utilized by means of flumes and dams. The "floating" mills of Europe and America were an example of the earlier method, while the "tide" mills, using impounded tidal waves, were an example of the latter. The windmill was apparently not used in Europe until the twelfth century.

Considerable capital was required for both windmills and water mills. In mediaeval Europe, in many instances, the monks erected the mills; in some cases the towns built their own. Most of the mills, however, were erected by the lords of the manors and were leased to the millers usually on the basis of annual payments; these constituted a considerable part of the noblemen's revenue. Mediaeval records indicate that the tolls were often very burdensome. In the thirteenth century both townspeople and peasants began to use hand mills openly, in spite of fines, confiscation of mills and even excommunication. Generally, however, the lords succeeded in keeping their privileges until the abolition of the feudal dues. The millers were too scattered to form guilds; but because of the indispensability of their product they were closely regulated by the lords or by the town government. In general, regulation was designed to fix the tolls, insure accurate weights and measures and prevent adulteration. In the larger towns the bakers were often dominant, buying the grain and having it ground. In some cases the magistrates found it necessary to establish town granaries and to purchase grain in large quantities.

The English colonists in America who had brought no hand mills with them used crude mortars. In all the colonies there were passed laws to encourage mill building. Many windmills were erected but water mills proved more efficient and gradually superseded all others. At the end of the colonial period there was no neighborhood without its gristmill. Most of these were small and crude, containing no machinery other than the millstones and a single sifter; the majority operated on a custom basis, charging a toll for grinding the corn. In the middle colonies there were, however, larger merchant mills which bought their grain and sold the finished product. Those concentrated along the Brandywine and Wissahickon creeks (near Philadelphia) had by 1750 reached a high degree of technical excellence. Buhrstones were imported from France. New machines were developed to clean the wheat before milling. Sifting was done more carefully, silk bolting cloths being used first by the Brandywine millers. About 1795 the latter installed the first of Oliver Evans' new machines, which carried the mechanization of the mill almost to the point reached in modern times.

As a result of Evans' inventions the industry moved into the towns; production grew to a large scale, becoming concentrated and localized. Changes in wheat production contributed to this development. Just before the Civil War the white wheat of the Atlantic coastal plain began to be superseded by the soft red winter wheat of the Ohio valley; after the Civil War the hard red spring wheat of the northwest suddenly gained favor, being followed a generation later by the hard red winter wheat of the southwest. Each of these changes brought shifts in milling leadership. Just after the revolution Baltimore was the chief center; about 1820 Richmond and Rochester gained preeminence; after the Civil War St. Louis and Minneapolis held leadership in turn; while in recent years Buffalo and Kansas City mills have expanded most rapidly.

New wheats also have been an important factor in the development of new milling methods. From 1795 to 1870 the only major advances were better wheat cleaning methods and the rise of steam power mills. From 1870 to 1890, however, significant changes took place. The introduction

of the purifier about 1870 made possible a pure white flour from hard wheat and gave leadership to the mills in the spring wheat area. The roller mill, introduced a few years later, brought in the modern system of grinding. Although neither of these was an American invention, American millers, particularly those at Minneapolis, took the lead in applying them and reaped the greatest benefits. They were able to do so because they had developed large scale production and concentration of ownership, perfected a marketing organization which brought the grain of the whole northwest to their mill doors, and pushed the building of railroads eastward toward the great consuming centers and westward into the wheat areas. Meanwhile they had established powerful banking connections to finance their wheat purchases. C. A. Pillsbury and Company (organized in 1874), later the Pillsbury Flour Mills Company, the Washburn-Crosby Company (organized in 1879) and the Northwest Consolidated Milling Company (organized in 1891) were the three leaders of the industry in the northwest.

After 1890 there were no great changes in milling machinery. Newer and larger mills gave more attention to sifting and the sifting process became more complicated. Machines were introduced to clean smut from wheat; sack sewing machines and conveyors reduced the labor involved in the packing of flour. After 1900 the light and flimsy wooden structures which housed many large mills were replaced by modern buildings of brick, stone or concrete. The greatest change in milling after 1890 was the adoption of wheat and flour testing. Wheat brought in from ever wider areas varied greatly in composition. Large scale buyers now demanded uniform quality of flour. Competition among millers made necessary an economical wheat mixture. For these reasons scientific wheat testing became the rule and wheat was no longer purchased according to a grade based on external indications alone but rather on a protein test. The larger mills acquired laboratories and came to be laboratory controlled.

At the same time the miller learned how to cut production costs by artificial bleaching, a process which shortened the storage time of the flour. Although the consumer demanded a very white flour, the regulating authorities in some of the states and at Washington became convinced that artificially bleached flour was unfit for human consumption and tried to prevent its sale. This led to the introduction of a variety of dark breads, largely through the grinding of rye flour and corn meal. The increased use of macaroni products and breakfast foods produced the same effect. But the effort to bar the bleached flour from interstate commerce failed and today the miller may bleach artificially provided the flour is not overbleached so that quality is impaired or inferiority concealed. In recent years white flour has been attacked on other grounds, chiefly because it is said to be less nutritious than whole wheat flour. The millers deny this charge and apparently they have some scientific support. But popular prejudice, together with the increasing variety of foods in the modern diet, has caused a decline in the use of white flour.

Since the World War the chief change in the industry has been the decrease in importance of the northwestern mills. Two causes have been largely responsible: first, the general rise in railroad freight rates, which has brought about the decentralization of the industry, so that the large Minneapolis companies have built or acquired mills in other sections of the country; and, second, the dwindling supply of high grade red spring wheat. Because of the latter the northwestern millers have had to pay a premium for their supplies from Canada in the form of tariff duties. Since Canadian wheat can be milled in bond for the export trade, Minneapolis millers have transferred this phase of their activities to their Buffalo plants.

The first gristmill was usually given a warm welcome by a frontier community. But the characteristic antagonism of the farmer toward the miller soon cropped up. In the period following the Civil War farmers accused the Minneapolis millers of monopolizing the wheat of Minnesota and refusing to pay fair prices; at a later date farmers charged the millers with being in league with elevator companies and commission men in the grain exchanges. State grain inspection (later to become national) and state regulation of terminal elevators ended this source of complaint; but the old feeling of hostility reappeared when farmers demanded and millers opposed the prohibition of trading in grain futures.

As late as 1919 there were more than 21,000 flour and gristmills in the United States; nearly half of these were small custom mills grinding for toll and producing for the most part feed for farm livestock. Of the 10,000 merchant mills more than half ground less than a thousand barrels of flour annually. Thus the industry is scattered and dispersed; but there is also, as has been said, a tendency toward concentration. The bulk

of the wheat flour is produced in a few states; in 1923, for example, the Minnesota mills produced one fifth of the country's output and the Kansas mills almost one seventh. Concentration in the hands of a few large companies is also a characteristic of the industry; in 1921 five companies, operating forty-nine mills, were responsible for nearly one fourth of the total national output.

The first national trade organization of millers, the Millers' National Association, was formed in 1873 in order to direct and unify the fight against the claimants for purifier patents. At the same time local associations were being set up to control neighborhood wheat supplies or to force favorable railroad rates. State associations also made their appearance for the purpose of promoting the establishment of mutual fire insurance companies and uniform wheat grading and inspection. In the following decades the national association concerned itself largely with the problems of flour adulteration and the building up of the export trade. Since the export millers were dissatisfied with results achieved, a new national association, the Millers' National Federation, was organized. This body also occupied itself with railroad rate and service matters as well as with the securing of more liberal drawbacks on export shipments and the advocacy of reciprocity with Canada, Cuba and other countries. During the World War the federation became a means of contact between the millers and the federal government. Since then it has concentrated on developing foreign markets and carrying on the usual trade association activities —the collection and distribution of statistics of output, shipments, prices and stocks in hand. An important achievement has been the preparation of a uniform cost accounting system for the industry.

The labor problems of flour milling have always been of comparatively slight importance, principally because the labor force of even the larger mills is quite small. In 1919, for example, out of 10,708 merchant mills in the country only two employed more than 1000 men and only ten employed more than 250 men, while 9400 mills employed 5 men or fewer. Trade unionism has not been strong in the industry for this reason; another contributory factor is that most of the operations can be performed by unskilled labor. Only in the chief milling companies have the workers been numerous enough to form unions. For a time after 1897 the International Union of Flour and Cereal Mill Employees made rapid progress in organizing the mill workers on a craft basis, but a disastrous strike in the Minneapolis mills in 1903 broke the organization. Again in 1917 and 1918 there was a revival of unionism, this time on an industrial union basis and under the aegis of the International Union of United Brewery, Flour, Cereal, and Soft Drink Workers; but this venture also was short lived. The larger companies seem to have combated the growth of the movement by forming company unions and shop committees and by an organized program of welfare work.

For the western millers New England and the middle states have always been the chief markets. In the early days selling was mainly by commission houses, to which the miller shipped on consignment; but as the market grew larger and more complex the flour broker appeared on the scene. The abuses of the commission trade led to the rise of the millers' agent as the chief mill representative in the market. By 1903, however, the miller was beginning to push his own products and was finding that many commission houses and jobbers had special brands, against which he had to compete. The millers began therefore not only to advertise their products but also to set up branch houses, from which they sent out salesmen direct to bakers, retail grocers and other customers. This movement reached its height about 1920; since then there has been a reaction in the direction of a greater resort to middlemen. In part this has been due to market changes, especially the growth of large scale baking. A generation ago the chief demand was for flour suitable for household baking. Since the World War, however, there has been a steady trend away from household baking toward bakery products. At the same time the development of more scientific methods and the increased mechanization of the baking processes have brought about the rise of great bakeries and of many baking chains and combinations.

Up to 1840 almost all American wheat exported was milled before being shipped; but during the next forty years flour exports, while they did not decline, fell behind wheat exports. Beginning, however, with 1880, there set in a great increase in flour exports, caused in part by progress in export marketing methods, in part by the technical improvements which produced a better flour but in the main by the fact that American millers were securing a superior type of bread wheat at very low prices. In recent years American flour has again slipped from its commanding position in the world trade. In the

United Kingdom, for example, new large scale mills have been able to compete on more equal terms with American mills. Canadian mills have steadily been cutting into American markets. Inequitable railroad and ocean freight rate structures have resulted in the supplanting of flour shipments by wheat. The inability of the northwestern millers to obtain high grade home grown wheat at a price low enough to permit competition in foreign markets has been another factor. The recent European high protective grain and flour duties and the requirements for the mixing of a given proportion of domestic with foreign wheat or flour have likewise contributed to this situation.

The chief European markets for American flour in recent years have been the United Kingdom, the Netherlands, Denmark, Germany and Norway. In all of these countries American millers have been facing strong competition, chiefly from Canadian millers, whose spring wheat flour has a strength better suited for blending with local products than that of the American hard winter wheats. In addition domestic mills are becoming increasingly important. In the United Kingdom, for example, where more than half of the mills are controlled by the Cooperative Wholesale Society, Joseph Rank, Ltd., and Spillers, which produce 62½ percent of the total flour milled in the country, there is overcapacity in milling; the result therefore is importation of wheat rather than flour. The chief wheats used by the English millers are Canadian, Australian, Argentinian and American no. 2 hard winter. In Ireland efforts have recently been made to discourage flour importations because of the existence of local mills; the flour that does reach the country comes from English port millers. Scottish millers are compelled to meet the competition of Canadian mills; of American mills at Buffalo, which mill Canadian wheat in bond; and of English branch plants located in Scotland.

The millers of the Netherlands, who produce about three fourths of the flour locally consumed, depend largely upon the United States, Argentina and Canada for their wheat requirements. What flour is imported comes for the most part from the United States. In Germany before the World War German grown wheat was considered too soft for domestic baking needs and most of the wheat stocks were imported. But the exigencies of war compelled the development of a milling mixture made up entirely of German grain; this to a large extent has been the post-war characteristic of German flour. Millers have been required by law to use a certain percentage of German wheat in all mill mixtures, this percentage varying from 40 to 70 percent depending upon the size of the domestic crop. In the post-war period there were approximately 27,000 mills in Germany, of which but 3000 were merchant mills. French mills, which more completely than any other European group utilize domestic grown wheat, have also been compelled by law to favor French grains in their milling mixtures; for a considerable length of time this proportion has been as high as 97 percent.

In Denmark locally grown wheat is used for livestock, with the result that the country imports both wheat and flour. Only from 35 to 45 percent of flour locally consumed is manufactured by domestic mills; the rest is furnished by Canadian and American millers. Sweden like Germany and France requires its millers to mix a specified percentage of domestic grown wheat with foreign stocks, and this proportion may run as high as 70 percent. In Norway the wheat, rye, barley and wheat flour trade is in the hands of a state monopoly which imports stocks for domestic needs through agents of foreign grain exporters and mills. Domestic millers are obliged to receive the grain at a fixed price and to grind it under instructions from the state monopoly; while millers may sell their products on their own responsibility, they must render a monthly accounting of sales. It is interesting to note too that the monopoly buys all the grain suitable for human consumption offered by local farmers. The price paid for home wheat is fixed at a somewhat higher level than that prevailing on imported wheat; also the price of flour is the same in all parts of Norway.

In the western hemisphere Cuba and Brazil have been the largest customers of American millers, although Argentinian mills are a strong competitor in the Brazilian market. American mills have been turning increasingly to the Orient as their chief outlet; China and the Philippines are now the best American markets in the East, and despite the competition in China from native, Japanese and Canadian millers Americans have succeeded in holding their own.

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See: GRAINS; GRAIN ELEVATORS; COMMODITY EXCHANGES; FOOD SUPPLY.

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MILNER, VISCOUNT ALFRED (1854–1925), British colonial administrator and statesman. Milner was educated chiefly in Germany and at Balliol College, Oxford, where he achieved high honors under the tutelage of Benjamin Jowett and acquired a permanent bent of mind in favor of national collectivism. His social idealism aligned him at first with reform movements; but his early public career in Egypt and as chairman of the Board of Inland Revenue won him prestige as a financial administrator of outstanding ability. His most conspicuous activity was as high commissioner for South Africa from 1897 to 1905. Appointed to this post in the midst of passions released by the Jameson raid, Milner made the uitlander franchise the crucial issue in his task of securing British supremacy in south Africa. The Boer War followed his failure to achieve the franchise by negotiation. As the war proceeded to the extinction of Boer independence, Milner became administrator and later governor of the conquered republics. Assisted by a group of young Oxonians he undertook large schemes of social reconstruction involving educational reform, railway building, land settlement and restocking of farms. These measures were financed in part by a 10 percent levy on the net gold output of The Rand and with a minimum reliance upon private enterprise in their execution. On the other hand, Milner alienated British sentiment by introducing oriental labor for the mines in an attempt to build an economic structure independent of Bantu tribesmen. Milner's ulterior objectives were moreover irreconcilable with the rise of Afrikander population at the cape. In the long run neither political nor cultural Anglicization has prevailed in south Africa, but Milner's efforts brought about an economic union which provided the basis for the Union of South Africa. During the World War Milner became, next to Lloyd George, the outstanding personality in the civilian administration of the British Empire; he completed his public career in 1921 after formulating the bases for Egyptian independence. In a revised edition of *England in Egypt* (London 1892, 13th ed. 1920) he reversed his earlier skeptical attitude toward Egyptian nationalism. His view of the empire as an organism he set forth in *Questions of the Hour* (London 1923, enlarged ed. 1925), in which he championed a mixed economic structure for Great Britain, to include elements of capitalism, state socialism and syndicalism.

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MILOVANOVIĆ, MILOVAN (1863–1912), Serbian statesman. Milovanović received his law degree at the University of Paris in 1886 and became professor of law at Belgrade University. He had a prominent part in the drafting of the Serbian constitution of 1888, which was at that time one of the most liberal in Europe; later, in 1901, he was one of the chief authors of the reactionary constitution which served only the personal interests of King Alexander and Queen Draga. He held successively the posts of undersecretary in the Ministry of Foreign Affairs, minister of justice and minister of commerce and industry.

Milovanović played a leading role in Serbian foreign affairs. He served as ambassador at Bucharest in 1900 and as ambassador at Rome from 1902 to 1907 and held the portfolio of Foreign Affairs from 1907 until 1912, in which year he was also prime minister. He won wide recognition for his reestablishment of diplomatic relations with England in 1906, for effecting a Serbian-Rumanian rapprochement and for winning Italy's diplomatic support for Serbia on all important problems including the Danube-Adriatic railway question and the Bosnian annexation crisis. He brought about the alliance of Serbia with the Entente and promoted friendly relations with Germany. One of his outstanding achievements consisted in pointing out to the forum of Europe, in connection with the Bosnian crisis, the essential meaning of the Serbian question, which from that time acquired a real and lasting significance. Another of his important accomplishments was the alliance between Bulgaria and Serbia in 1912, which Milovanović arranged despite very keen opposition in his own country and tremendous difficulties in Bulgaria; he was successful in this matter only because of the extremely strong pressure brought to bear by Russia. All this systematic work was preparatory to isolating and later fighting the Austro-Hungarian monarchy in the interests of pan-Serbism, of which Milovanović was a convinced exponent. It was to this end that he maintained connections with nationalist circles and encouraged their activities by grants of large sums of money.

MILOŠ BOGIČEVIĆ

MILTON, JOHN (1608–74), English poet and pamphleteer. After 1641 Milton took part in the attacks directed by the Roundheads against most of the prevailing political and religious institutions. Appointed Latin secretary of the Council of State in 1649 by the victorious Independents, he dedicated his literary powers to defending the Commonwealth and to conducting the foreign correspondence. Blindness forced him to retire from public life, but once again on the eve of the Restoration he joined the fray in a trenchant protest against the return of the Stuarts. As events turned against him, he once more took up poetry and devoted the remaining years of his life to completing the three poems which the world has "not willingly let die."

Milton's reform pamphlets resulted in the main from his personal experiences. On leaving the university he abandoned his intention of entering the church, for he was repelled by the servility which seemed a prerequisite of ecclesiastical advancement. Accordingly in his first pamphlet *Of Reformation Touching Church Discipline in England* (1641) he pointed out the shortcomings of the Reformation in England and turned against those who from traditional, worldly or political motives wished to retain the unreformed system of bishops and ritual. In rapidly succeeding pamphlets he drove home his arguments regarding the highly controversial subject of ecclesiastical organization and creed. Provoked by the efforts of his adversaries to silence him through the press laws, Milton wrote his most renowned prose treatise, *Areopagitica* (1644), in which he denounced state interference with liberty of the press and pointed out the Catholic origins of censorship. An unhappy marriage had turned his attention to the problem of divorce and in several pamphlets, notably *Doctrine and Discipline of Divorce* (1643), he interprets marriage as a contract which if it prove unsatisfactory should be dissolved; his study of the Bible convinced him of the inferiority of woman. His experience as teacher of a small group of private pupils is reflected in his pamphlet on *Education* (1644), which sought to replace the traditional system of pedagogy with the new theories of Comenius; in place of the dull grind of Latin grammar he recommended a vital system of linguistic training and practical knowledge.

When Charles I was brought before his judges, Milton undertook to prove that the people had the right to try and to execute an unjust king. *The Tenure of Kings and Magistrates* (1649) advances the theories of the monarchomachs, bolstered according to the practise of the time with Biblical precedents. As an official rebuttal to the antirevolutionary ideologists Milton elaborated his democratic thesis in *Eikonoklastes* (1649),

Defenses of the English People (*Pro populo anglicano defensio*, 1651, and . . . *defensio secunda*, 1654) and in later pamphlets which systematically championed the republic as the best form of government. His much vaunted ideal of religious toleration, like that of Cromwell, applied within rather narrow limits and rigidly excluded Catholics on the one hand and the more radical nonconformists on the other.

Milton represents expansive Renaissance individualism coupled with Calvinistic austerity. In religion, ethics, politics and education he believed in responsible individual liberty, at least for the elect few. But his ideas were conditioned by his personality and his times. He claimed liberty for individuals like himself. When he encountered an obstacle to his own growth in society he demanded its removal. He reacted, for example, against humdrum education, but his system counted practically only with unusually gifted children. In ethics his personal individualism suggests affinities with Machiavelli. The elect minority had more ethical liberty than the "rabble." Milton was only one of the many pamphleteers of his age, and his writings are heavily colored by the spirit of the period in which he lived. It was only with Macaulay that the tradition set in which ascribed the essential spiritual conquests of the Puritan rebellion to Milton alone.

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MILUTIN, NIKOLAI ALEXEYEVICH (1818–72), Russian statesman. Milutin was an ardent advocate of the emancipation of the serfs on terms that would enable them to acquire land from the nobility with the aid of credit grants from the public treasury. With the advent of Alexander II peasant reform was placed on the order of the day and provincial committees composed of local nobility were organized in 1857 for the purpose of formulating reform projects. Two years later a special commission was charged with the coordination of these projects and the drafting of a general law for all of Russia. Milutin won a leading position in that commission and used his influence in combating the general tendency of the provincial projects to favor the interest of the nobility to the disadvantage of the peasantry about to be emancipated. Despite the bitter opposition of the representatives of the committees of the nobility he succeeded in increasing the portion of land to be acquired by the peasants as well as in reducing both the payments by them to the landowners for the use of the land pending its redemption and the amounts to be remitted by them to the public treasury in repayment of the credit extended to them in the course of emancipation. The concessions which he was able to obtain were subsequently greatly curtailed when the reform came up for final consideration at the Main Committee and the Imperial Council, on which Milutin did not serve; the final act granted the peasants less land than they had held and utilized under serfdom, while the price they had to pay for it was very high. Milutin also served as president of the commission which drafted the law establishing in the several provinces and districts elected bodies composed of representatives of all classes for the administration of local affairs. He endeavored to endow those institutions with the largest possible measure of autonomy and with a broad jurisdiction. Earlier in his career he had drafted a new law on self-government for the city of St. Petersburg, which widened the scope of municipal self-government introduced under Catherine II in 1785.

In 1861 immediately after the enactment of peasant emancipation less liberal policies gained the upper hand in the government and Milutin was induced to resign. Two years later Alexander II summoned him again and entrusted him with the enactment of an agrarian reform in Poland, then in the throes of an insurrection. Here he had an opportunity to carry out more fully his democratic ideals, inasmuch as the Polish noblemen were in no position to protect their interests, since it was precisely for the purpose of crushing their power that the agrarian reform had been undertaken by the government. Under the law of 1864 drafted by Milutin the peasants of Poland, unlike the peasants of Russia proper, obtained all that land which they had formerly had in use as serfs, and they

received it without payment or any redemption charges.

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Consult: Leroy-Beaulieu, A., *Un homme d'état russe, Nicolas Milutine* (Paris 1884); Kiesewetter, A. A., *Istoricheskie otkliki* (Historical echoes) (Moscow 1915) p. 221–67; Dzivelegov, A. K., in *Velikaya reforma* (The great reform), 6 vols. (Moscow 1911) vol. v, p. 68–87; Milutina, M. A., "Iz zapisok Marii Aggeevni Milutinoi" (Diary of M. A. Milutina) in *Russkaya starina*, vol. xcvii (1899) 39–65, 265–88, 575–601, and vol. xcviii (1899) 105–27.

MINIMUM WAGE. The demand for a minimum wage has been made by various groups with differing objectives. During the early period of industrialism the demand for state fixation of wages on the part of nascent labor organizations represents probably the last attempt to perpetuate the older idea of fixed and customary standards of living against the encroachments of modern capitalism. The nineteenth century laissez faire reaction against state regulation of private industry rejected alike legislation setting minimum wages (such as the French legislation of 1270) and the much more usual setting of maximum rates (typified by the famous English statutes of 1357 and 1536, which had fallen into disuse and were finally repealed in 1813). At the end of the nineteenth century, however, two streams of influence, the search for a device to protect helpless and unorganized groups, and the endeavor by states to regulate disputes between employers and workers, united to bring the concept of a state enforced minimum wage into new prominence.

The attitude of trade unions toward the state enforced minimum wage has varied from country to country and with economic conditions and the current strength of trade unionism. In general in periods of trade depression, falling prices and declining membership unions have favored legislative action even when as in Australia and New Zealand the fixing of a minimum effectively prohibits for the duration of the award any organized attempts to secure more than that sum. In England and the United States organized male workers are opposed to compulsory wage fixation. The attitude of strong unions toward such legislation for women and unorganized workers, except in America, where the greatest skepticism concerning government intervention has prevailed, has been one of approval tempered by the fear that it may weaken the chance of unionizing the groups affected. More recently, however, the demand for a high state enforced minimum wage has been adopted by socialist groups, particularly in England and Germany, as a step toward elimination of profits and ultimate socialist control of industry.

Ever since the early nineteenth century the concept of a minimum wage has been part of trade union policy which, accepting the economic facts of capitalism, aimed at uniformity and standardization as techniques for protecting the standard of living of the worker. Every trade agreement is in effect an assurance that the members of the union if employed shall receive not less than the stated rate of remuneration, the minimum wage at the same time serving as an instrument for the elimination of substandard competition between workmen.

Prior to the end of the nineteenth century the only legislative regulation of wages was in the realm of government contracts where the state could exercise its power as a direct and indirect employer of labor. The so-called fair wages clause which was adopted in Belgium as early as 1855 and is now generally used in the awarding of public contracts provides that the workers should receive at least the rate of wages provided for in trade agreements or paid by reputable employers.

State enforced wage laws of varying scope now form part of the social legislation of practically all industrial countries and are in general of two types: specific legislation in the interests of unorganized and underpaid groups, such as workers in the "sweated" trades, women and minors, and regulation in the course of the settlement of industrial disputes through compulsory governmental conciliation or arbitration. Both types appeared about the same time, the latter in the New Zealand legislation of 1894, the former after a vigorous "antisweating" agitation in the Australian state of Victoria in 1896. At the present time the former type is represented in the English trade and wages boards, based on the Victorian precedent, in the legislation of certain states in the United States and of the Canadian provinces (except British Columbia) and in the homework legislation first enacted in France in 1915 and subsequently in other European countries. The latter type is characteristic of countries where compulsory conciliation and arbitration prevail, such as Australia, New Zealand and, more recently, Germany. The regulation of all wages in the Soviet Union falls outside the type of legislation characteristic of capitalistic countries.

Outside of Australia, New Zealand, Germany,

Great Britain and British Columbia the laws are in the main confined to women and juveniles because of constitutional difficulties, trade union opposition to compulsory arbitration and the fact that homework, where the need for wage regulation has been most widely conceded, in the main employs females. In Great Britain minimum wage laws cover a considerable proportion of the relatively lower paid and less well organized (including those in agriculture), while in Australia practically all trades in which disputes occur are subject to regulation by the courts. This was the case also in New Zealand up to 1932 but the almost complete removal of the element of compulsion by the act of April 8 of that year rendered uncertain the future scope of minimum wage legislation. Agricultural workers and those in domestic service are often excluded in practise or by explicit legal provision. In Hungary only agricultural workers are covered by minimum wage legislation.

In the United States the extension of minimum wage laws has always been hampered by constitutional challenges. Beginning with Massachusetts in 1912, fifteen states, the District of Columbia and Porto Rico enacted legislation applicable to women and children. Further extension has been entirely checked by the adverse District of Columbia decision in 1923, which reversed the favorable decision in the Oregon case of 1917 and was followed by similar decisions on the part of the Kansas and Arizona courts and by repeal in other states. In the remaining ten states, most of which are industrially unimportant, the continued existence of the laws depends upon the favor of employers; and administrators have proceeded with caution. In Massachusetts the absence of any penalty other than a limited publicity will probably preserve the law, while Wisconsin has hoped to obtain the same immunity by an amendment of 1925 providing for the prohibition of wages that are "oppressive." The legality of minimum wage fixation in respect to minors has been upheld by the Minnesota decision of 1925.

The growing importance of minimum wage legislation was recognized in the Treaty of Versailles, and in 1927 and 1928 the subject was discussed at the annual conferences of the International Labor Office. In the latter year a convention was adopted whereby the ratifying states agreed to fix minimum rates of wages for workers in poorly organized trades where wages were exceptionally low, and approval was accorded a recommendation setting out some generally agreed principles regarding machinery and bases of wage fixation. By 1931 the convention had been ratified by eight states and the recommendation adopted by nine.

The machinery adopted has varied with the original objectives of state wage regulation. Where it has been mainly a by-product of the attempt to control industrial disputes, as in Australia and New Zealand, the most common machinery has been the court of arbitration consisting of one or a number of judges who may or may not sit with assessors. Very frequently provision is made for the appointment of conciliation committees or officers, who will endeavor to settle disputes and incidentally regulate wages without recourse to the courts but whose decisions may be declared legally binding. In practise the arbitration courts have dominated the situation because of their position as bodies of final appeal or recourse which alone are able to give legally binding decisions; and this dominance has been increased in Australia by the growing practise of requiring the central authority, whether a court or specially constituted body, to declare a basic minimum below which no other body may fix wages. Even in Germany, where the considerable degree of wage regulation that now exists is based upon a system of conciliation committees, the importance of the centrally appointed conciliation officers and of the Ministry of Labor, which has power to declare that agreements shall have nation wide currency, is on the increase and is likely to be enhanced by the emergency decrees of 1931. From time to time, as, for example, in South Australia and New South Wales, the arbitration system has been combined with wages boards set up for special industries. The boards, which enjoy a continuous existence but are subject to the overriding decisions of the arbitration court, are normally constituted of equal numbers of representative employers and workers together with an impartial chairman and sometimes a number of public representatives.

Where state wage regulation has been primarily motivated by a desire to raise wages of special groups or industries, the machinery has taken several forms. Occasionally, as in the laws of South Dakota, Utah and in the early anti-sweating legislation in Australia, the state will write into the law the exact amount of the minimum wage and specify the groups affected. This method lacks both adaptability and flexibility and is relatively rare. The second and more usual technique for fixing minimum wages in

the interests of underpaid workers has been the use of the wages board, constituted as described above. This device, used originally in Victoria and Tasmania, was subsequently adopted in Great Britain in the trade boards system and the agricultural wages boards and is the basic method in the American, Canadian and Mexican legislation and in the homework legislation of Germany, France, Norway and other European countries.

The degree of independence of these boards varies. In the United States and in South Africa they tend to be little more than special trade subcommittees of the general board charged with wage fixation. Elsewhere provision is made for appeal from their decisions to a higher authority, which may be, as in Great Britain, the Ministry of Labor or, as in Victoria, a specially constituted court, while in states with an arbitration system the boards are usually subject to the overriding decision of the central court.

Opinion differs concerning the relative advantages of these different methods of fixing minimum wages, but in general the tendency is to promote the use of conciliation or wages board technique as far as possible. Where more than one type exists, there arise difficult problems of coordination, which in Australia have assumed serious proportions because of constitutional limitations to the powers that may be exercised by the obvious centralizing authority, the Federal Court of Arbitration.

The problem of enforcement of the payment of minimum rates is less serious where trade unionism is strong, although where wage regulation has developed as a by-product of arbitration the presence of strong trade unions constitutes a new danger, since these are likely to attempt to obtain by direct action a wage higher than that fixed by the court. In general the administrative authorities have been reluctant to exercise their power to imprison or fine recalcitrant workers or employers, and the cancellation of the right of preference of employment is no penalty to a powerful union. Where trade unionism is weak, the main enforcement problem is one of maintaining an adequate inspectorate. There has been a general tendency to economize unduly in this respect.

The attempt by wage regulators to find some basis for wages other than that offered by the existing market situation has led to the emergence of three main criteria, according to which the wage should be respectively a living wage, a fair wage—that is, one equal to that received by workers performing work of equal skill, difficulty or unpleasantness—or a wage which industry can bear.

In many cases the regulating authorities have been given little or no guidance from the legislative authorities. Thus except between 1928 and 1930 the influential Australian Federal Court has been left to evolve its own principles, as have the British trade boards and until 1918 the courts of New South Wales and New Zealand. The living wage is now prescribed in New South Wales, Western Australia, all the American states with wages boards and in certain Canadian laws; the fair wage, in Tasmania and in most of the European countries with homework laws. The payment of what the trade can bear was prescribed in the early laws of South Australia and Victoria but is now nowhere the sole criterion. Several laws, for example, those of Massachusetts, New Zealand after 1918, Victoria, South Australia and Queensland, prescribe more than one basis. In practise except where the laws apply only to homeworkers the living wage has come to be the most generally adopted basis for the wages of the unskilled, or lowest grade of workers; and above that the so-called secondary wage has been fixed by reference to the fair wages criterion, subject to downward revisions if the ability of the industry to pay is seriously questioned.

All three bases present problems. The specific content of the living wage is elastic; and although the Australian experience with the famous Harvester wage (fixed by Mr. Justice Higgins in 1907) suggests that a given wage once determined comes to possess a high degree of concreteness and to command general acceptance, the prevalence in South Africa of two very different living standards, the native and the white, has prevented the emergence of an agreed standard. With some reluctance wage regulators have faced the necessity for making periodic revisions in the money amount of the living wage to correspond with changing price levels, and discussion now turns on the appropriate index and frequency of adjustment. Differences in requirements due to the unequal size of workers' families have everywhere complicated the determination of an appropriate living wage, but in New Zealand and New South Wales the problem has been solved by the adoption of the family allowance system. The earlier question as to whether the living wage should vary from trade to trade has in general been decided in favor of uniformity. The problem of the unduly slow,

subnormal or infirm worker has been met by the general use of a system of supervised permits to employ such persons at less than the prevailing rates; but the attempt to prescribe a living wage for industries that operate irregularly over the week or year has raised hitherto unsolved difficulties.

Before 1914 the question of whether the living wage might not exceed the capacity of industry to pay arose only occasionally in individual industries because of the relatively conservative minima adopted, and the authorities tended to argue that an industry which could not pay the general living wage should go out of existence or receive a public subsidy. But after 1918 the more generous standards, which commanded general approval, raised the question in a more serious form and, acting either on formal legislative instructions or on their own initiative, wage regulators came more and more to consider the general level of productivity in the community as a whole and to argue that as this changed so should the content of the living wage.

In applying the fair wage principle regulators have been forced to take into account the relative importance of conditions other than wages in evaluating the relative rates of remuneration of different kinds of work, and when faced with the problem of a declining demand for some types of highly skilled work or by the rising wages of the unskilled they have tended to interpret the fair wage as that which will insure the desired supply of any particular kind of labor. The fixing of a wage that industry could bear was soon seen to involve in the case of individual industries an arbitrary choice as to the exact size of the industry which it was desired to maintain. The extension of the concept to industry in general has raised but not settled the problems of selecting the rate of wages appropriate to any particular level of productivity and discovering measures of "ability to pay."

Although there exist almost universal agreement as to the immediate and beneficial effects of minimum wage regulation on the workers involved and a claim that its enforcement has brought about improvements in industrial technique as well as the elimination of substandard competition based mainly on underpaid labor, there is much disagreement concerning the general economic effects of such regulation. Opponents point to the reduction of the differential between skilled and unskilled wages, to the evil effects of the protective tariff in Australia (which is held to have been necessitated by the high wages fixed in manufacturing industry), to the high level of unemployment in Great Britain in the post-war years, to the alleged tendency of the minimum to become the maximum and to the hampering effect upon business of a system that involves minute regulation of industrial practises and rigid wage rates. Supporters of the minimum wage, on the other hand, urge that the reduced differential is a world wide phenomenon attributable in the main to a rising standard of education and a declining demand for skilled workers; they challenge the relationship in Australia between minimum wages and the tariff, claim that at most wage regulation in Great Britain bears but a small share of responsibility for post-war unemployment, point out that during the war in some countries regulated wages were even held below the level they might otherwise have reached and maintain that the relative fixity of the price of labor is not necessarily a disadvantage. Finally, they deny the implication that without regulation the individual worker normally receives much more than the going wage, affirm that the minimum tends to become the maximum only in times of declining business activity and assert that the alternative to a state regulated fixation of working conditions is an equally detailed regulation enforced by trade unions.

It is a difficult and still open question whether the wages of all workers can be permanently increased by the raising of the minimum. Nor can analysis of the general economic effect of minimum wages be isolated from the broader discussion of the forces influencing the determination of the general level of wages.

E. M. BURNS

See: WAGES; WAGE REGULATION; ARBITRATION, INDUSTRIAL; COURTS, INDUSTRIAL; LABOR LEGISLATION AND LAW; LABOR, GOVERNMENT SERVICES FOR; COLLECTIVE BARGAINING; TRADE AGREEMENTS; CONSUMERS' LEAGUES; COST OF LIVING; STANDARDS OF LIVING; FAMILY ALLOWANCE; CHILD, section on CHILD LABOR; WOMEN IN INDUSTRY; HOMEWORK, INDUSTRIAL.

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MINING

HISTORY, TECHNOLOGY AND ECONOMICS. Mining, narrowly speaking, means the extraction of crude ores and minerals other than building stone and their removal to the surface. From the social viewpoint, however, it is more useful to think of the mineral industries as a group and include also the quarrying of stone and the production of oil and natural gas as well as the associated activities of milling or concentrating the crude mineral and of smelting and refining or otherwise preparing it for the market. In this broader view the metallurgical processes of reducing the crude ore to metal and the burning of cement, lime and the simpler clay products are all parts of the mineral industry. European usage and trade practise in the United States tend to classify them in this way.

From the viewpoint of use the minerals fall into two major groups, the power minerals and the raw materials, whose value output was roughly equal in 1929 (Table 1). Among the power minerals coal ranks much the highest, contributing 30.4 percent of the world total, while crude oil and natural gas supply 14.3 percent and 3.3 percent respectively. Of the metals by far the largest item is pig iron, which contributes 13.1 percent as compared with 17.3 percent for all other metals combined. The non-metallics, constituting 21.6 percent of the total, rank much higher than is generally realized and in point of value exceed either pig iron or "all other metals."

TABLE I

VALUE OF WORLD MINERAL PRODUCTION DISTRIBUTED BY MAJOR GROUPS, 1929

(PERCENTAGES)

Power minerals (fuels)	48.0
Raw materials:	
Metals	30.4
Non-metallics	21.6
World total	100.0

Source: United States, Bureau of Mines, *Mineral Resources of the United States, 1929*, 2 vols. (1932).

In the United States the value of mineral products in 1929 was $5,887,000,000, not including the values added through the refining of petroleum and the coking of coal, as compared with an average yearly output of $426,000,000 in the years 1881–85; for the world as a whole the 1929 value was probably $15,000,000,000. The mineral industry of the United States is smaller than agriculture or manufacturing but larger than fishing or lumbering, and in point of number of workers employed and value of products it is roughly equal to rail transport. But in some countries mining bulks much larger in the national life. In the United States one man in forty works in the mines, in England one man in ten.

Mining emerges before the dawn of history; the names stone age and bronze age chronicle

great forward steps in the utilization of flint, copper and tin. The first development was probably the alluvial mining of gold in the gravels deposited by rivers or postglacial floods. There was also alluvial production of tin; the tin output of Cornwall and Devon was almost wholly alluvial until the fifteenth century. Outcrop mining was the earliest source of copper, lead, silver and iron, found in veins in the rocks. Underground mining with shafts and galleries was, however, practised in many regions even before the iron age; it was in fact used in the stone age for the best quality of flints. Wooden shovels, picks, wedges and stone hammers were used to mine and break the ore; this was followed by the development of metal tools, the alternate use of fire and cold water to shatter the rock, drainage by adits and the beginnings of smelting. The ancient civilizations made considerable improvements in mining technology; thus in the Spanish mines the Romans improved drainage by use of the Archimedean screw pump, a rotating wooden cylinder containing a copper helix, and of the water wheel with boxes or buckets round its edge. Mines were sources of state power and revenue, objects of colonization and prizes of war. The Phoenicians, who traded extensively in ores, also worked the silver and copper mines of southern Spain, the possession of which was one of the chief stakes in the Second Punic War. Mines were often quickly exhausted, particularly under the leasing system, which resulted in unrestrained exploitation of labor and resources; the system was changed under the Roman Empire, the emperors asserting continually increasing claims to minerals until all mines came to be considered imperial property.

Mining declined during the early Middle Ages but revived in the tenth and eleventh centuries, and by the sixteenth century mining and metallurgy were well established in central Europe, particularly in Germany (the resources of which had not been depleted by the Romans), thus acquiring an advantage over other countries. Mining was intimately identified with the development of capitalism and of capitalist entrepreneurs. Merchant capitalists, such as the Fuggers, controlled and attempted to monopolize the mining industry of the Holy Roman Empire and of countries as remote as Spain; in Elizabethan England the preeminent speculator and entrepreneur, Sir Bevis Bulmer, was engaged primarily in mining. The technology and economics of mining moreover stimulated the characteristic features of capitalist enterprise—wage labor, large scale production, the search for new sources of capital for expansion and various schemes for the control of production and trade in accordance with market requirements. This renaissance of mining encouraged and was stimulated by considerable progress in technology; one of the great advances was the development of screens, jigs and classifiers for concentrating the ore. The invention of gunpowder led to blasting and made possible the construction of longer drainage tunnels; but even with this improvement and despite the use of horse driven bucket gins or crude suction pumps, probably first introduced in Germany, the increasing depth of the mines rendered problems of draining so difficult that mining faced a seemingly impassable obstacle. At this critical juncture steam pumps, Savery's uncouth "Miners' Friend," were introduced in England at the beginning of the eighteenth century; and their subsequent improvement by Newcomen and Watt permitted work at much greater depths and practically initiated the modern system of mining. The industrial revolution, to which mining contributed by the impulse it gave to the development of the steam engine, accelerated the tempo of technological change in the mineral industries; some of the major advances were smelting with coke, the safety lamp, the hot blast in the iron furnace, the technique of drilling oil and gas wells, power rock drills, Bessemer steel, steel from high phosphorous ores, short flame explosives, the by-product coke oven and the cyanide process of extracting gold.

Significant as early mining development was to the life of the times, production was on a petty scale as compared with the present. Aside from the processes concerned with building stone, the operations in which the ancient world came nearest to the modern were the working of gold and silver. When Alexander captured Susa and Persepolis he seized treasure estimated at around $190,000,000. Yet this amount, which represented hoards accumulated over a thousand years by the Assyrian, Babylonian and Persian empires, could be equaled by the Rand gold mines in eleven months' time. And the slag dumps of Laurium, whose mines were for three hundred years the principal source of silver, indicate a total yield barely equal to one year's production of the modern world. Even the accelerated rate of gold and silver production which followed the Spanish conquests in the New

World, while dwarfing all previous supplies, was small by present standards. The modern world is producing forty times as much silver and one hundred times as much gold as the world of the conquistadores and many hundred times as much iron or coal. As late as 1750, even after the use of coke, the total iron output of the western world was hardly 200,000 tons a year, an amount that would take the present world blast furnace capacity only sixteen hours to produce.

The significance of mining was enormously increased by the industrial revolution, which was in a real sense the mineral revolution. Probably more than 97 percent of the recent yearly output of minerals has come into existence in the last 150 years. From major dependence on materials of vegetable and animal origin the western world passed within a century to major dependence on the minerals. The shift that began with the coming of steam power and iron ships continues today in the displacement of animal by automotive transport which has swept North America and is now invading the rest of the world. What this change has meant is illustrated by the fact that while the production of the earth materials in the United States increased between three and fourfold from 1899 to 1929, the national cut of lumber remained approximately the same at the end of the period as at the beginning. During these three decades the growth of mining far outstripped agriculture and even exceeded manufactures and rail transport. While population increased 62 percent, agricultural production 48 percent, the physical volume of manufactures 210 percent and the freight handled by steam railroads 238 percent, the production of minerals increased 286 percent. Aside from food products and printing more than half the value added in manufacturing comes from industries fabricating the mineral materials, and minerals furnish approximately 65 percent of the freight transported by rail. The minerals supply the chief bases of the chemical industry. They have displaced wood as the chief material of construction. They are the foundation of transport, which is the greatest of all consumers of metal and power. The minerals are the essence of industrialism and, one may add, of war, for modern war might almost be described as a chemical reaction built up around the metals, the nitrates and the coal tar derivatives. Ours is the age of the power machine, and minerals furnish both the power and the machine.

The result is an astonishing increase in the draft on the underground reserves. In the hundred years from Waterloo to the Marne the white population of the world increased threefold, but the consumption of the metals and the mineral fuels increased seventy-five to one hundredfold, the world's requirements expanding like a sum at compound interest drawing 5 to 7 percent a year. The World War checked the rate of increase especially in coal and iron, but 1929 saw new peaks of world production in all of the principal minerals except gold, which in every country tends to be the first depleted. It is reasonable, however, to expect a gradually diminishing rate of increase, for it is incredible that the geometrical increase of the nineteenth century should persist indefinitely. The cumulative effect of increasing demand is seen in the fact that in the last generation the world has used more metal and more coal and oil than in all previous time. Machine civilization faces a dilemma—how to reconcile this insatiable growth of demand with the obvious limitations of supply.

The characteristics inherent in the geography and geology of mineral resources cut across all problems of mineral economics. First among these is the localized occurrence of mineral deposits and production (Table II). Nearly all the world's radium comes from a single mine in the Belgian Congo, the nickel from Canada and New Caledonia and 80 percent of the tungsten from southeastern Asia. Even for the commoner metals, which are widely disseminated in the earth's crust, the mining has been concentrated in marked degree; six regions produce three fourths of the world's iron ore requirements, despite the fact that iron resources are available in almost every country.

Second among the characteristics peculiar to mining is the fortuitous character of discovery. All business runs a risk of upset through technical change or through a change in habits of consumption, but in mining there is also the chance of discovery of new deposits and the chance that a given ore body may grow larger or smaller, richer or leaner, with depth. Until 1890 Sicily supplied the world with sulphur and the future seemed reasonably secure; then this future was shattered by a new process whereby sulphur was recovered from alkali waste and by the development of deposits in the Gulf coast region of the United States, which resulted in American sulphur invading Europe in competition with Sicilian sulphur. An agreement partitioning the world market permits the Sicilian

TABLE II

PERCENTAGE DISTRIBUTION BY COUNTRIES OF THE WORLD'S

COUNTRY	COAL	LIGNITE	PETROLEUM	IRON ORE	MANGANESE	NICKEL (IN TERMS OF METAL)	COPPER (MINE PRODUCTION)
North America							
Canada	0.9	1.6	0.1	—	*	88.8	5.8
Mexico	0.1	—	3.0	0.1	*	—	4.5
United States	41.5	†	67.8	37.1	1.8	0.6	46.7
Other countries	*	—	*	1.1	0.1	—	0.2
South America							
Argentina	‡	‡	0.6	—	*	—	—
Bolivia	—	—	—	—	—	—	0.4
Brazil	*	—	—	*	9.2	—	—
Chile	0.1	—	—	0.9	0.1	—	16.5
Colombia	*	—	1.4	—	—	—	—
Peru	—	—	0.9	—	—	—	2.9
Venezuela	*	—	9.3	—	—	—	—
Other countries	—	—	0.7	—	—	—	—
Europe							
Austria	*	1.5	—	1.0	—	—	0.1
Belgium	2.0	—	—	0.1	—	—	—
Czechoslovakia	1.2	10.0	*	0.9	—	—	0.1
France	4.0	0.5	*	25.4	—	—	*
Germany	12.3	77.0	0.1	3.1	*	—	1.5
Saar	1.0	—	—	—	—	—	—
Hungary	0.1	3.1	—	0.1	0.6	—	—
Italy	*	0.3	*	0.4	0.3	—	*
Luxemburg	—	—	—	3.8	—	—	—
Netherlands	0.9	0.1	—	*	—	—	—
Poland	3.5	*	0.3	0.3	—	—	—
Rumania	*	1.2	2.3	0.1	1.0	—	*
Russia	2.7	†	6.7	3.6	34.4	—	1.3
Spain	0.5	0.2	—	3.3	0.5	—	3.3
Sweden	*	—	—	5.8	0.4	—	*
United Kingdom	19.7	*	—	6.7	—	—	*
Yugoslavia	*	2.3	—	0.2	0.1	—	0.8
Other countries	*	0.8	*	0.6	0.1	1.2	1.5
Asia							
China	1.9	—	—	0.9	1.2	—	0.2
Korea (Chosen)	0.1	—	—	0.3	—	—	*
Federated Malay States	0.1	—	—	—	—	—	—
India	1.8	—	0.6	1.2	29.5	1.5	0.4
Japan	2.6	0.1	0.1	‡	0.5	—	4.2
Dutch East Indies	0.1	—	2.7	—	0.6	—	—
Persia	—	—	2.8	—	—	—	—
Russia	0.5	†	0.1	**	—	—	**
Turkey	0.1	*	—	—	*	—	—
Other countries	0.3	*	0.4	0.4	0.1	—	0.3
Africa							
Algeria	*	—	*	1.1	*	—	*
Belgian Congo	*	*	—	*	—	—	7.1
Gold Coast	—	—	—	—	13.5	—	—
Rhodesia	0.1	—	—	*	0.1	—	0.3
Union of South Africa	1.0	—	—	*	0.3	—	0.5
Other countries	*	—	0.1	1.1	5.6	—	0.7
Oceania							
Australia	0.8	0.8	—	0.4	*	0.1	0.7
New Caledonia	*	—	—	*	—	7.8	—
New Zealand	0.1	0.5	—	—	—	—	—
Other countries	—	—	—	—	—	—	—

* Less than one tenth of 1 percent.
† Included with coal.
‡ Not available.
** Included with Russia in Europe.

TABLE II

PRODUCTION OF PRINCIPAL MINERALS, 1929

LEAD ORE (IN TERMS OF METAL)	ZINC (MINE PRODUCTION)	TIN (CONTENT OF ORE)	GOLD	SILVER	BAUXITE (ALUMINUM ORE)	SULPHUR	COUNTRY
							North America
8.5	5.2	—	9.9	8.9	—	—	Canada
14.2	10.0	—	3.4	41.7	—	—	Mexico
33.6	38.0	—	10.5	23.5	17.3	85.2	United States
0.6	2.0	*	0.3	1.2	—	—	Other countries
							South America
0.2	—	—	*	*	—	—	Argentina
0.9	0.1	24.1	*	1.9	—	—	Bolivia
—	—	—	0.5	*	—	—	Brazil
0.1	*	—	0.1	0.1	—	0.6	Chile
—	—	—	0.2	*	—	—	Colombia
1.6	1.4	—	0.6	8.3	—	—	Peru
—	—	—	0.2	*	—	—	Venezuela
—	—	*	0.6	0.1	18.5	—	Other countries
							Europe
0.4	0.2	—	—	*	—	—	Austria
—	0.3	—	—	—	—	—	Belgium
0.3	*	—	*	0.3	—	—	Czechoslovakia
0.6	0.6	—	0.3	0.1	31.0	—	France
3.5	8.2	—	*	2.1	0.3	—	Germany
—	—	—	—	—	—	—	Saar
*	—	—	—	—	18.1	—	Hungary
1.8	5.0	—	*	0.2	9.0	11.5	Italy
—	—	—	—	—	—	—	Luxemburg
—	—	—	—	—	—	—	Netherlands
0.7	8.1	—	—	0.1	—	—	Poland
*	—	—	0.4	*	0.1	—	Rumania
0.5	0.3	—	5.1	0.1	—	—	Russia
8.2	2.9	—	*	1.0	0.1	0.4	Spain
0.4	1.7	—	0.1	*	—	—	Sweden
1.1	*	1.7	*	*	0.1	—	United Kingdom
0.8	*	—	0.1	*	4.8	—	Yugoslavia
0.5	0.4	0.4	*	0.2	0.3	—	Other countries
							Asia
0.4	0.3	3.5	0.3	*	—	—	China
*	—	—	0.7	*	—	—	(Chosen) Korea
—	—	34.9	0.1	—	—	—	Federated Malay States
5.9	1.8	1.4	1.9	*	0.4	—	India
0.2	0.6	0.4	1.8	2.2	—	2.3	Japan
—	—	18.3	0.6	0.8	—	—	Dutch East Indies
—	—	—	—	—	—	—	Persia
—	**	—	—	—	—	—	Russia
0.4	0.2	—	*	0.1	—	—	Turkey
*	1.1	7.2	0.9	2.8	—	—	Other countries
							Africa
0.5	0.9	—		0.1	—	—	Algeria
—	—	0.4		*	—	—	Belgian Congo
—	—	5.6		—	—	—	Gold Coast
0.1	1.3	—	58.4	*	—	—	Rhodesia
*	—	0.6		0.4	—	—	Union of South Africa
2.7	0.3	0.3		—	—	—	Other countries
							Oceania
11.3	9.1	1.2			*	—	Australia
*	*	—			—	—	New Caledonia
—	—	—	3.0	3.8	—	—	New Zealand
—	—	—			—	—	Other countries

Source: For lead: Great Britain, Imperial Institute, *The Mineral Industry of the British Empire and Foreign Countries, Statistical Summary, 1929–31* (1932). For other minerals: United States, Bureau of Mines, *Mineral Resources of the United States, 1929*, 2 vols. (1932).

industry to survive, but its production in 1929 was hardly 60 percent of that in 1900. The history of mining abounds with parallel examples. The discovery of radium in the Katanga cut the world price in half, while the discovery of platinum in South Africa and the deep levels of the Frood mine of Ontario completely altered the prospects of the Russian and Colombian producers, who formerly had a virtual monopoly. It is this element of chance that introduces in many branches of mining a high degree of risk and speculative gain.

But the greatest of the characteristics peculiar to mining is exhaustibility and the consequent tendency to increasing cost. Mineral reserves usually show a small proportion of rich and easily accessible material grading into much larger proportions of lean or inaccessible material, and it is a commonplace that the richer deposits are attacked first. As these are exhausted mining proceeds to leaner ores and thinner beds at greater depths, so that the natural conditions become progressively more difficult. For a while this tendency may be offset by more efficient management, but there comes a time when with the best of management the old mine cannot compete. Increasing cost is the Nemesis of mining enterprise. The ominous record of steadily growing difficulties reflected in increasing costs can be seen in thousands of individual mines and scores of districts around the world. The universal tendency of natural conditions to grow more difficult is frequently offset, however, by countertendencies in an opposite direction. Mineral economics is the record of a battle between the growing difficulties of nature on the one hand and the factors of exploration, transport and technology on the other.

Discovery of new deposits, the first of the factors offsetting depletion, tends to be most active during the early settlement of a country. Most of the great metal districts of Spanish America had been found within a hundred years after the voyage of Columbus. A second and greater wave of exploration followed the discovery of gold in 1849 in California. The wave rolled over the western United States, Australia, British Columbia, the Straits Settlements and Alaska. In the settled lands of Asia old workings were quickly rediscovered, and the riches of South Africa were unearthed soon after the Boer migrations. Over most of this area the wave of surface prospecting has now largely spent itself, and the only regions in which anything like the California gold rush is now going on are Rhodesia and the Congo and northern Canada. In the United States no great finds comparable with Butte or the Comstock lode have been uncovered in the last quarter century; and of the thirty-three leading districts producing gold, silver, copper, lead, zinc and even iron only five have been found since 1900 and none at all since 1907. Discovery, however, continues to make large contributions to the supply of those minerals which the old time prospector could not see or whose value he did not recognize, such as oil and gas, bauxite, sulphur, borax, helium and the rare metals. But the search for minerals must now be organized on a large and costly scale. A new science of geophysical prospecting offers possibilities. It seems likely that the costs of exploration will increase and that future discoveries will consist more in the extension of known deposits than in the location of new ones.

Extension of the transport system acts to offset increasing costs by opening deposits already known but hitherto inaccessible. A classic example is the completion of the American transcontinental railroads. Many of the western mining districts, first worked for placer gold, were known to contain the baser metals; but not until rail transport was provided could large scale exploitation begin. Thereafter a tide of nonferrous metals poured upon the markets of the world, increasing supply and lowering prices.

But as more and more of the earth's surface is prospected and as the rail and highway net is pushed nearer to completion, the relief to be expected from exploration and transport becomes less, and the burden of meeting the increasing difficulties of mining falls back more and more upon technology. The progress of mineral technology is now distinguished less by the single epoch making changes produced by the inventions of Savery, Watt and Bessemer than by the cumulative result of a great number of smaller changes. Efficiency, however, has advanced still faster than before. Underground the changes center around the mechanization first of haulage, then of drilling and undercutting and finally of loading the broken mineral into the mine car, the change from hand to machine methods being greatly facilitated by electrification. Similar advances in steam and electric shovels have enormously changed open pit mining. Parallel to and reenforcing mechanization have come advances in the art of handling ore, the peculiar province of the min-

ing engineer. Until recently an essential of the miner's task was to select the valuable ore from the waste. The transition from this older selective mining to mass methods, by which all the material in the mineralized area is removed to the surface and the ore separated from the waste by mechanical means, is a revolutionary change; in coal the impurities are washed out with streams of water or air, and in metals shaking tables and the ingenious process of flotation are used. The cumulative effect of technological advance is seen in the increasing output per worker in the mines, which has been rising wherever the pressure of increasing natural difficulties is not too serious. From 1889 to 1929 in the United States the output per worker increased 89 percent in mining bituminous coal. For copper mining the corresponding increase was 98 percent, for iron ore 543 percent, for gypsum 490 percent and for phosphate rock 995 percent. Similar though seldom equal increases have occurred in other countries where the physical conditions have permitted, as, for example, in the iron mines of northern Sweden, Luxemburg and Lorraine, which are in the stage of relative youth.

On the other hand, it is critically important to note that where depletion is serious it has often swallowed up all the advances of technology, so that the output per worker is stationary or declining. This is found even in North America, as in the anthracite and mercury mines of the United States and in the undersea coal mines of Nova Scotia. It is found more often in Europe, where exhaustion is naturally further advanced than in the New World. Thus the iron ore mines of Cumberland and Spain, which are older than those of Lorraine and northern Sweden, show a declining output per worker or at best no increase. Such was also the condition of the European coal mines for the forty years ending in 1924; since 1924 there has been some improvement, especially in the Ruhr, but the general position of the European coal industry is illustrated by Britain, where the yield per worker is notably less today than it was in the 1880's.

The test of output per worker thus reveals both declining and increasing costs of mining. But advances in the technique of production have been reenforced by similar advances in the arts of utilization, and economies in use have further helped to offset the steady depletion of the richer deposits. The lines of attack have included the development of substitutes, illustrated by the use of aluminum instead of tin and by the replacement of mineral nitrate from Chile with synthetic products derived from atmospheric nitrogen. Notable progress has been made in recovery of by-products, illustrated by the rise of the by-product coke oven and the recovery of gold and rare metals in the electrolytic refining of copper. Rust resisting alloys prolong the life of steel. Consumption of fuel per horse power hour has been cut to a tenth of what it was in the days of Watt, and the advance in thermal efficiency has been especially rapid in the last twenty years. From 1909 to 1929 the average consumption of fuel per unit of product was reduced 66 percent in electric central stations, 47 percent on the steam railroads and about 33 percent in all industries and railroads combined. The cracking process and other advances in petroleum refining have doubled and trebled the yield of gasoline from crude oil. Practical methods for synthesizing alcohols and gasoline developed by French and German chemists indicate that given sufficiently high prices the world's motor fuel and lubricants can be produced from coal.

In the case of the metals the drain upon resources is lightened by the accumulation of a working capital above ground which tends to come back in the form of scrap. As the stock increases the quantity of scrap tends to increase also, and the collection and resmelting of scrap have now become a large industry. In the United States alone the annual value of secondary nonferrous metal amounts to $330,000,000 and the value of scrap iron and steel may be equally great. Scrap is increasing faster than the mine production of new metal. The growing importance of the secondary material modifies the demand for the primary material and adds to the bargaining power of consumers, who are also the largest producers of scrap. The extent to which scrap will supply the needs of the future depends partly on the course of prices. If and when the growing difficulties of mining force new levels of price, the proportion recovered will increase. It is conceivable that the world will reach a point, obviously in the far future, where the demand for virgin metal will be limited chiefly to replacing the loss effected by dissipating uses, wastage and corrosion and where the bulk of the annual requirements will be met from scrap.

The net result of the battle against increasing costs is seen in the long time trend of mineral prices. Taking the world as a whole and the

minerals as a whole, prices have been falling in relation to the general commodity index throughout most of the last hundred years. There are important exceptions, such as the relative increase in the price of bituminous coal in England and of anthracite in the United States; but in the world view it is clear that up to the present the factors of discovery, transport and technology have been winning over the increasing difficulties of nature. In individual districts or countries, however, there are many evidences of depletion and advancing age. The characteristic migration in centers of production is as much a sign of increasing costs in the old districts as of abundant resources in the new. From western Europe the center of metal mining shifted to the United States, but the imposing totals of American production have been sustained by exhausting many once famous districts and turning quickly to new sources of supply.

In any country the metals, according to de Launay, are attacked in descending order of price. There is first a period of exploitation of gold and silver, followed successively by periods of copper, lead and zinc and iron. The successive periods overlap, for more than one metal is worked at a given time; but the relative order of emphasis tends to follow the value per pound. Western Europe has long since passed the gold and silver stage and probably the copper and lead stages as well. In England the stage of gold and silver was passed early; the peak of copper was passed in 1861, of lead in 1870, of zinc about the same time and of tin in 1871. Even the peak of high grade iron ore was passed in 1882. The United States has passed the peak of gold production, for even under the incentive furnished by the price levels of 1932 the output was only a little more than half the 1915 peak; and apparently it has passed the silver peak as well. The United States is in the copper stage of metal exploitation. In any country moreover the exploitation of a given mineral, according to Hewett, tends to follow a typical life cycle, characterized in youth by an exportable surplus of crude mineral and in old age by imports of crude mineral from abroad. The operation of this cycle is very clearly exemplified in the Old World, especially in Belgium, and it may be seen in process in the United States. On balance the United States still has a large exportable surplus of minerals, but three of its most important industries—oil, copper and Pennsylvania anthracite—show a decline in ratio of exports to imports; in 1932 all three asked and obtained tariff protection, reflecting in part the plight of increasingly influential groups of marginal producers, whose mines are getting deeper and who can no longer meet foreign competition. While most of the American mineral industries are in the stage of youth or early maturity, the evidence is clear that they are following the course already taken by so many Old World districts, which leads ultimately to increasing costs.

The characteristics peculiar to mineral resources—localized occurrence, the chance nature of discovery and exhaustibility—have largely influenced the business organization of mining. Their effects, however, are by no means uniform because of the great variety of natural conditions in the mineral industries. The speculative reputation of some branches of mining, such as the precious metals, copper and oil, rests on uncertainties of discovery and reserves and on the sharp variations in price characteristic of most of the high value minerals. The shares of even the more stable companies listed on the New York and London exchanges fluctuate more sharply than the average of industrial stocks. Investors are impressed with occasional brilliant successes and overlook the large percentage of failures; at Cripple Creek the proportion of incorporated ventures actually paying back their capital is said to have been 1 in 3500. These conditions have made oil and the metals, especially gold, a fertile field for wildcat securities issued by fraudulent promoters.

The chance of large reward attracts great numbers of would be entrepreneurs, and on the frontiers of white settlement mining is often characterized by many small undertakings. In proportion to total output the number of producing units is probably greatest in the stage of placer gold mining. Even coal mining tends to begin with many small workings along the hillsides. And in the mining the petty enterprise displays a curious persistency. But the tendency toward concentration of control—present in all industry—is intensified in mining by the process of depletion. Exhaustion of the more accessible mineral soon curtails the number of producers and concentrates production in corporate units commanding sufficient capital to work the larger ore bodies in depth. The advantages inherent in large scale production have been reenforced by the technological change from selective to mass mining already described and by the competition from other

districts which cheaper transport has fostered. The process of concentration was interrupted by the World War, when sudden increase of prices led to the opening of thousands of new mines—metallic, non-metallic and coal. It has since been resumed with increased intensity; and mortality of the marginal mines, especially of the smaller commercial classes, has been so great that, for example, the number of bituminous coal mines in the United States declined from 9331 in 1923 to 6057 in 1929.

The tendency toward vertical integration, observable in many other industries, is intensified in mining by the localized occurrence and varying quality of mineral deposits. Smelting and refining of the metals are typically combined with mining, either directly or by commercial alliance, partly in order to assure outlets for the mine, partly to assure a mixture of ores with desired fluxing qualities for the smelter. There are, however, important exceptions, such as the zinc smelters of Belgium and the Mississippi valley, which are independent of mining. Petroleum refining is generally integrated with production of crude oil, transport by pipe line and tanker, and distribution. In iron and steel the integration extends not only from furnace to ore but to coal mines and limestone quarry or even to the smelter and mine producing the zinc for galvanizing. In some instances the integration crosses over into the manufacture of finished goods; sometimes the initiative comes from the manufacturer seeking raw materials, as in the case of the Ford Company and the International Harvester Company; sometimes from the mineral producer seeking outlets, as in the case of the American Aluminum Company and the Anaconda Copper Company. Where the raw mineral is available in abundance, however, the incentive to vertical integration is small. Thus except for railroad fuel hardly 7 percent of the bituminous steam coal production of the United States is controlled by consumers, although most steel companies have found it prudent to acquire reserves of high grade coking coal, the supply of which is relatively limited.

The peculiarities of mineral deposition largely influence the workings of competition in mining. Nowhere does the classical conception of competition as the automatic and beneficent regulator of supply in relation to need require more reservation on the score of lag, friction and waste than in the exploitation of mineral resources. No other field has given rise to more interesting experiments in production control. Where the known deposits are few there is a tendency to monopoly. In radium, nickel, vanadium, molybdenum, borax, sulphur and aluminum the world supply is dominated either by a single company or at most by a few. But where the deposits of commercial grade are numerous there is often a tendency to overdevelopment and destructive competition. Excess productive capacity is found in many lines of industry, but the causes operative elsewhere are reenforced in mining by the desire of the owner of each deposit to profit from his holding through the only use to which it can be put, by the fact that a new mine typically has lower costs than an old one and particularly by the pressure to open additional mines in order to meet taxes and carrying charges on undeveloped reserves. The tendency is aggravated in the United States by the common law doctrine that ownership of the surface carries ownership of the subsurface as well until otherwise disposed of, a concept which caused title to most of the coal and other stratified mineral deposits to pass into the ownership of a million or more farmers in small rectangular holdings that bear no relation to the facts of geology or to the economics and engineering of mining. The discordance is most serious in the case of migratory oil and gas.

The World War by driving up prices further stimulated expansion of mining capacity, and the condition is intensified by mechanization and by changes in consumption. The growth of coal demand is retarded by thermal efficiency and that of metal demand by the rise of scrap. As a result excess productive facilities became especially apparent in the post-war years. The condition affects the Old World as well as the New and the metals as well as the fuels. The readjustments necessary were most serious in coal mining, and they have shaken the industry of three continents.

Overdevelopment has led to many attempts at production control. Outside of the oil industry and of export associations organized under the Webb Act, the movement in the United States is still largely in the stage of discussion. The recent decision of the Supreme Court in the Appalachian Coals case, permitting the formation of selling pools by groups of coal operators, may materially alter the present situation. In Europe the favored device is the cartel, and the urgency of the problem of production control in the minerals is shown by the fact that

of forty-six international cartels sixteen deal with mineral products and seven others with forms of rolled steel. The British coal industry is operating on a system of quotas under government supervision, established in 1930. Proposals for an international coal cartel have so far met unsurmountable obstacles. The situation in Europe has increasingly called forth intervention and regulation by the government and has strengthened the demands for nationalization of some of the mineral industries, e.g. British coal, on economic, social and national grounds.

H. O. ROGERS
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LABOR. The wide geographical distribution of mineral resources, their isolated location and limited life have brought distinctive social problems into the mining areas. The boom town of the gold rush, with its crowds of single men and its colorful disorder, has a soberer counterpart in the mushroom growth that now follows discovery of a new oil pool. But equally characteristic are the ghost towns that haunt abandoned mines in all parts of the world, bearing mute testimony to the exhaustibility of mines and the unstable character of mining. Where the mines are large, other industries may be attracted to the region, as silk and rayon have been drawn to the American anthracite area to utilize the labor of the women. Even a large city like Scranton, however, faces painful readjustment when the Lackawanna steel industry moves west in search of cheaper ore and fuel and when the virgin coal of the area nears exhaustion and mining must turn to pillars and thin seams.

Of the more than 800,000 miners employed in American mines and quarries (exclusive of petroleum and natural gas wells) an increasing proportion, especially in the coal fields of the north, live in incorporated communities where a goodly percentage own their homes. But there are also many hundreds of squalid mining "patches" where the prospect of exhaustion of the mineral resources destroys the incentive to improvement. The problem of isolation is most acute in the company towns, where the mine operator owns the land, houses and company store, builds the roads, school and church and supplies fuel, light, water and doctor. This paternalistic relation between employer-landlord and worker-tenant in the company town creates problems inimical to free social institutions, tempts the owner to exploit the worker through the company store, gives him great power over the social life and civil rights of his employees and has frequently been utilized by the employer to resist organization by trade unions and to crush strikes.

In the ancient civilizations mines were worked mainly by slaves, including convicts and prisoners of war, who could be forced to endure the arduous labor and the dangers of underground mining. The slave miners were cruelly and sordidly exploited in the Egyptian and Athenian mines, the Phoenician and the Roman. The miners crept naked underground and worked amid great hardships, urged on by the blows of overseers; children sometimes crawled after them with baskets, collecting the ore and carrying it to the surface; there old men and women, old and their vigor destroyed by the time they were thirty, pounded the ore in mortars and crushed it in hand mills. Frequently roofs caved in and buried the miners. Weakness and sickness were met with blows, conspiracies and escapes with death. In the Roman Empire the sentence *in metalla*, condemned to the mines, was the most severe penalty next to death. There were many revolts of the slave miners in Egypt; in Athens, where rebellious miners once intrenched themselves on a mountain and raided the surrounding territory; and in Spain, where one revolt involved 40,000 miners. A class of free miners sometimes existed alongside slave labor, as is shown by the regulations for mines in Portugal in the reign of Hadrian, where the mines were worked largely by individuals, some of whom did their own work while others employed slaves. One of the consequences of the downfall of the Roman Empire was the freeing of these slave miners.

During the late Middle Ages arose the free prospecting and working miner and the free mining community, recognized by law in the fourteenth and fifteenth centuries. The mining community, which included the lords of the soil, the persons working or exploiting the mines and the royal tax collectors, had its own organization, courts of law and recognized rights, which were frequently amplified and strengthened by the royal power in its struggle with the nobility. As mining became more and more a large scale capitalist enterprise the wage laborer, the ancestor of the modern proletarian, made his definite appearance. The miner was a free hired worker, propertyless and wholly dependent upon his wages, subject to unemployment. He

was also nomadic; thus the *freie Knappen* of Germany migrated in large numbers to other countries, bringing their skill with them and considerably influencing the development of mining. But while the miners enjoyed many privileges, including exemption from villenage, their labor was hard and wages were low compared with other skilled trades. The miners early formed organizations, such as the *Knappschaften*, for mutual aid and struggle against the employers. Meanwhile in the mines of the New World older conditions of slave labor were introduced; it has been estimated that in Mexico and Peru 80 percent of the Indian laborers died every year and in the West Indies the mortality was so great as to force the importation of Negro slaves. Vestiges of the colonial exploitation of mine labor still exist. By the beginning of the industrial revolution European mines were being operated completely on a capitalist basis; and in the coalpits especially wages were at starvation levels, women and children were employed in heavy labor and working conditions were incredibly bad.

In few trades has the union movement made greater headway than among coal miners, who are a numerous class with a strong sense of solidarity. Grievances over the application of a complicated system of piece rates are common. Labor conditions among miners have often been below the average for wage earners as a whole. The demand for coal is inelastic, and although prices reflect world tendencies they are determined chiefly by local competition. Labor involves about 70 percent of the cost of production, a proportion far higher than in most industries. In these circumstances the employer is under strong pressure to cut wages in order to meet competitive conditions. One wage cut forces another, and a species of sweatshop competition ensues unless there is agreement as to a standard rate of wages. These characteristics go far to explain the development of trade unions in the coal mines of every country from Poland to Australia.

Powerful unions of coal miners have developed on the continent of Europe, particularly in Germany, France and Belgium, which bargain collectively with district and national associations of employers. Many great strikes have been waged, and the miners of the Ruhr in Germany were extremely active in the Communist revolutionary uprisings of 1919–21. In England the union movement in the coal fields dates from 1830. The Miners' Association of Great Britain and Ireland was formed in 1841 but was crushed by Lord Londonderry three years later, when it came to the support of the Durham miners in their historic struggle for fairer terms of hiring. In 1858 the union movement was revived by Alexander MacDonald and in 1888 the scattered unions were united in the Miners' Federation of Great Britain, which is now intrenched in all British coal mining districts. The federation waged many great strikes, materially improved the workers' conditions and influenced social legislation. In 1913–15 after one of their strikes the miners made an agreement for mutual strike action with the unions of railway and transport workers, the "Triple Alliance"; but in the strike of 1921 the miners were abandoned by their allies. The 1,100,000 miners went into action again in 1926, when they were supported by a general strike of all unions. The general strike lasted ten days, but it had been forced upon the leaders and they called it off at the first opportunity. The miners, however, maintained their hopeless struggle over a period of from three to nine months.

Unionism took early hold in the American coal mines; the first local union was organized in 1849 and the first national association of coal miners in 1861. The subsequent history of trade unionism in the coal mines is the record of a struggle to establish collective bargaining on a scale broad enough to stabilize wage rates in an industry of continental proportions operating in twenty-three states and four Canadian provinces. Local and even district unions proved unable to cope with interdistrict competition. The National Federation of Miners and Mine Laborers negotiated the first interstate wage agreement in 1886; but the system soon collapsed, partly through difficulties of enforcing the agreement and partly because of rivalry with the Knights of Labor, which for a time was active in the coal fields. Out of the wreckage of these two organizations was salvaged the United Mine Workers of America, which within a few decades was to become the largest trade union in the United States. The union in 1898 forced the establishment of collective bargaining in bituminous mining in what is known as the central field—Illinois, Indiana, Ohio and western Pennsylvania—with subsidiary agreements governing the outlying union fields. In the anthracite mines the union won its greatest victory under the leadership of John Mitchell in the strike of 1902, which forced recognition and set up machinery of conciliation and col-

lective bargaining. Through a series of strikes and suspensions and fortified by the practise of the "check off" of union dues the union so strengthened its position that at the height of its power in 1922 it was able to close 70 percent of the coal production of the United States and Canada. The strike affected some 450,000 men in the bituminous mines and 158,000 in the anthracite mines, lasted nearly five months and in point of numbers engaged, if not in duration, was the greatest industrial dispute in American history. Since then, however, the union has declined steadily under pressure of employer resistance and internal dissension (*see* COAL INDUSTRY). In 1932 a portion of the Illinois membership broke away from the parent body and formed the Progressive Miners of America under left wing leadership. In the 1931 strike in the Kentucky coal fields leadership was furnished by the Communist National Miners Union. Wages and labor standards have declined severely.

The International Miners' Federation, organized in 1890, deals only with coal mining and brings into consultation representatives of the national unions of Great Britain, France, Belgium, Germany, Poland and Czechoslovakia. Delegates from the United States have also participated from time to time. The possibility of mutual support in the event of strike was put to the test in 1926 by the great struggle of the British miners against longer hours and decreased pay. Plans for an embargo on exports to England and for an international strike collapsed, although some assistance in relief funds was provided. Since 1891 the federation has endorsed nationalization of coal mines, urged by the socialist movement for a generation. It was made a major issue by the British and German miners after the World War, and although defeated by the opposition of the owners the agitation left its mark in the increased social control which was incorporated in subsequent legislation.

Metal mining, in contrast to coal mining, shows relatively little of trade union organization. This is partly due to the tradition of the Cornish miners, who have been to metal mining in all English speaking countries what the Welsh, Scottish and English have been to coal mining. The Cornish miners worked for generations on the tribute, or contract, system, and there is little record of trade union movement in the Cornwall mines even down through the nineteenth century. Migrating to the metal mines of the United States, Canada, the Straits, Australia and Africa, the Cornishman took with him his preference for contracting, although usually he would join a union if and when other workers in the mines had taken the initiative in forming one.

In the American west every miner had his prospect and dreamed of becoming rich; wages on the frontier were relatively high and in the gold camps "high grading" was possible. Metal prices were fixed by world competition and not by local conditions, and there was not the continuous pressure to reduce wages as in the coal mines. While a local union was organized at Virginia city as early as 1867 and assemblies of the Knights of Labor were scattered through the metal mining districts, no move for collective bargaining on a district scale was made until the organization of the Western Federation of Miners in Butte in 1893. By that time conditions had changed. Much of the glamour of the early days had gone and the metal miner had changed from free adventurer to wage earner. Moreover operations were being concentrated in the hands of corporate enterprises that often controlled the state governments. During the strikes waged by the federation the employers utilized the state militia, the injunction and deportation as instruments of repression. Violence verging on civil war marked the series of great strikes waged by the federation —Coeur d'Alene in 1893, Cripple Creek in 1894, Leadville in 1896–97, Lake City and Coeur d'Alene in 1899, Telluride in 1901 and Idaho Springs in 1903. Through these strikes the federation secured many improvements in labor conditions. The struggles of the metal miners culminated in the bitterly fought strikes at Cripple Creek in 1903–04 and Goldfield in 1906–07. Out of these struggles arose the famous Moyer-Haywood-Pettibone case, which involved the illegal kidnaping of these union leaders, their arrest and trial on the charge of having murdered Governor Steunenburg of Idaho, and their ultimate acquittal. In 1905 the federation sponsored the organization of the Industrial Workers of the World but two years later withdrew its support. Thereafter unionism among the metal miners rapidly declined. Opposition of employers increased; and the "rustling card," or work permit, originated at Cripple Creek, spread to Butte and elsewhere. The correction of many of the workers' wrongs by state law or by action of the mining companies and the adoption of a sliding scale of wages based on the price of

metal, an arrangement which brought increases of wages with the rapid advance in metal prices after the World War, have removed some of the major arguments for unionism. The International Union of Mine, Mill and Smelter Workers, successor to the Western Federation, remains a nominal affiliate of the American Federation of Labor. The membership of the Union is small, however, and its power to negotiate wage agreements is limited.

Few other attempts have been made to organize the metal miners. One significant exception was the unsuccessful move made by the I. W. W. to organize the iron miners on the Mesabi Range, Minnesota, in 1916. Nor have the petroleum and natural gas industries been responsive to the trade union movement. A union of oil and gas workers organized with government support during the World War collapsed soon after the close of the war, and the 300,000 workers in this industry are for the most part unorganized.

Throughout the history of miners runs a thread of militancy, from the slave revolts of antiquity and the *freie Knappen* in mediaeval Germany to the Molly Maguires, the Western Federation of Miners and United Mine Workers in the United States and the revolutionary temper of the Ruhr miners. Even the Cornish miners earned the reputation in an earlier day of being "the roughest and most mutinous men in England." The militancy is mainly due to the influence of the miners' arduous occupation on the character of the men and to the dominant position of the employer in the typical mining community.

ISADOR LUBIN

See: MINING ACCIDENTS; MINING LAW; METALS; QUARRYING; COAL INDUSTRY; OIL; GAS INDUSTRY; NATURAL RESOURCES; CONSERVATION; INDUSTRIAL REVOLUTION; TECHNOLOGY; LOCATION OF INDUSTRY; TRADE UNIONS; COMPANY TOWNS; POLICING, INDUSTRIAL.

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MINING ACCIDENTS. Mining has always been a particularly hazardous industry. Although the death rate of miners from all types of disease is only slightly higher than that of workers in general, the death rate of miners from accidents is nearly four times as high. The mining industry does not provide facts to support the theory that wages in dangerous trades are adjusted to the degree of risk involved. The wages paid to mine workers, especially coal miners, are not sufficiently high to provide adequate incomes for their families or adequate insurance against the irregular and hazardous nature of mining work.

Studies of the sickness records of 357,321 German miners reveal that diseases of the digestive organs constituted 11.1 percent of all cases, neuralgia 9.4 percent, muscular rheumatism 8.3 percent, diseases of the respiratory organs 8.1 percent and other diseases each less than 1 percent. No extensive studies of morbidity rates among American miners have been made, so no direct comparisons are possible. Among American coal miners, according to Dr. Emery R. Hayhurst, "tuberculosis and pneumonia have about the same prevalence as elsewhere. . . . Several diseases supposedly of industrial character among miners, such as hookworm, nystagmus, and lockjaw, are practically non-existent." Digestive diseases are especially common among miners because they usually eat cold luncheons with unwashed hands in quite unsanitary surroundings. Neuralgia is induced or aggravated by dampness and is probably also affected by harmful gases in the air. Rheumatism results from working in cramped positions in wet clothing and in an atmosphere impregnated with moisture. The sudden change in temperature upon emergence from the mine shaft increases the prevalence of muscular rheumatism and respiratory diseases of all kinds. Diseases of the respiratory organs constitute a special hazard to miners because of dust, noxious gases and damp, impure air. Pneumokoniosis, also known as silicosis, anthrocosis, miners' phthisis and miners' asthma, is a disease peculiar to miners who breathe air filled with inorganic dusts, which causes the lung tissues to lose their spongy resiliency and predisposes to tuberculosis; the disease is preventable by the elimination of dust. Respiratory diseases, including pneumonia, asthma and tuberculosis, cause far more deaths and permanent disabilities than does any other form of illness. Among Illinois coal miners tuberculosis causes 9.2 percent of all deaths, pneumonia 9.1 percent, while other respiratory diseases account for 3.9 percent. Diseases of the respiratory organs rank next to accidents in deadliness.

Accidents in mining are more frequent than in other industries because the worker is exposed not only to the hazards of machinery but

TABLE I

ACCIDENT RATES IN TEN MOST HAZARDOUS INDUSTRIES, UNITED STATES, 1929–31

INDUSTRY	NUMBER OF UNITS	1931			1930			1929		
		MAN HOURS (in thousands)	ACCIDENT RATES		MAN HOURS (in thousands)	ACCIDENT RATES		MAN HOURS (in thousands)	ACCIDENT RATES	
			FREQUENCY	SEVERITY		FREQUENCY	SEVERITY		FREQUENCY	SEVERITY
Mining*	90	34,263	61.32	8.90	47,756	65.46	9.68	52,750	66.62	9.01
Quarrying	92	9,256	16.64	6.06	13,656	18.16	2.13	14,096	23.98	5.88
Ceramic	31	7,473	22.75	4.68	12,479	22.20	1.68	15,583	26.63	1.10
Construction	203	37,560	56.71	4.52	64,777	52.47	5.81	85,547	55.16	5.68
Marine	7	22,900	15.33	4.33	28,203	16.20	2.46	26,534	16.09	2.11
Woodworking and lumbering	129	46,091	31.09	2.27	68,317	37.82	3.68	90,516	44.63	3.73
Steel	100	270,704	10.11	2.19	412,480	11.48	2.52	535,370	16.46	2.77
Public utility	233	421,622	11.30	2.09	463,025	16.55	2.81	460,030	21.72	3.25
Chemical	145	141,307	10.65	2.01	162,631	14.73	1.95	182,520	16.76	1.63
Petroleum	42	434,460	13.03	1.98	512,806	17.33	2.27	500,690	25.85	2.40

* Includes coal, metal and non-metal mines.

Source: Compiled from National Safety Council, *Accident Facts 1932* (Chicago 1932) p. 20.

TABLE II

LOST TIME INJURIES IN MINING, UNITED STATES, 1930

TYPE OF MINING	NUMBER OF ESTABLISHMENTS	AVERAGE NUMBER OF EMPLOYEES	MAN HOURS WORKED (in thousands)	NUMBER OF LOST TIME INJURIES				NUMBER OF DAYS LOST TIME				INJURY RATES	
				TOTAL	DEATH AND PERMANENT TOTAL DISABILITY	PERMANENT PARTIAL DISABILITY	TEMPORARY DISABILITY	TOTAL	DEATH AND PERMANENT TOTAL DISABILITY	PERMANENT PARTIAL DISABILITY	TEMPORARY DISABILITY	FREQUENCY	SEVERITY
All groups	146	26,793	58,944	2,908	69	55	2,784	526,926	414,000	39,625	73,301	49.34	8.94
Metal	46	6,832	15,031	247	12	15	220	89,177	72,000	9,360	7,817	16.43	5.93
Non-metal	22	1,410	3,102	101	2	2	97	15,682	12,000	525	3,157	32.56	5.06
Anthracite coal	22	8,365	18,401	1,114	18	9	1,087	139,688	108,000	10,350	21,338	60.54	7.59
Bituminous coal	56	10,186	22,410	1,446	37	29	1,380	282,379	222,000	19,390	40,989	64.53	12.60

Source: National Safety Council, *Industrial Accident Statistics, 1931* (Chicago 1931) p. 22.

also to the hazards of cave-ins, explosions and fires. As standardization of accident statistics has only recently begun, it is not possible to present entirely satisfactory statistics of comparison for accident frequency rates and severity rates in mining and other industries (*see* ACCIDENTS, INDUSTRIAL). The National Safety Council, however, has published since 1930 carefully analyzed accident reports from a large number of plants in twenty-eight different industries. All of these reports show that mining (including coal, metal and other mines) is by far the most hazardous of all industries, in both frequency and severity of injuries (Table I). In 1931 mining involved 8 percent more accidents per 1,000,000 man hours than the construction industry, while the severity rate was nearly 47 percent higher than in quarrying; and the hazardous nature of mine work is still more apparent from the figures for 1929–30. While the rates change from year to year, not much significance, however, can be attached to the changes over short periods of time. A single disaster causing the death of 100 coal miners would greatly increase the lost time and raise the severity rate for that year. Statistics for 1931 alone, but covering a larger number of industries and reporting establishments, also give mining first place in the death and maiming of workers; mining led on all counts except in the severity rate for permanent partial disabilities, in which quarrying ranked first.

The accident hazard varies greatly in different kinds of mines and from plant to plant. Table II, compiled from statistics published by the National Safety Council, indicates that bituminous mining was the most hazardous in 1930, with a severity rate 66 percent higher than that for anthracite mining, 112 percent higher than that for metal mining and 149 percent higher than that for non-metal mining. The frequency rate for bituminous mining was only about 6.6 percent higher than that for anthracite but it was about double the rate for non-metal and nearly four times the rate for metal mining. From 1930 to 1931, according to the National Safety Council statistics, the severity rate in anthracite mining increased 32 percent and the frequency rate nearly 40 percent, while in bituminous mining the severity rate decreased more than 23 percent and the frequency rate almost 13 percent. The changes, however, are exaggerated because the National Safety Council receives reports from only one fourteenth of anthracite operations and less than one seventieth of bituminous operations. Reports to the United States Bureau of Mines show that in 1931 the fatality rate per 1,000,000 man hours in all anthracite mines increased from 1.758 to 1.838, or 6 percent, while in all bituminous mines the fatality rate decreased from 2.158 to 1.812, or 16 percent. Anthracite mining led in fatality rates in 1931 for the first time since 1919 because of a major disaster that killed five anthracite miners, while no major disasters occurred in the Pennsylvania bituminous mines, which normally account for more than half of the fatal accidents in American bituminous mining. As may be seen from Table III, from 1916 to 1931 bituminous mining had the highest fatality rates in nine of the fifteen years; gold mining led in three years, anthracite in two years and copper in one year.

Since 1916 spectacular coal mine disasters resulting from gas and dust explosions account for only 9 to about 17 percent of all coal mine fatalities, while cave-ins of roofs and coal caused 45 to 54 percent of all coal mine deaths (Table IV). Explosives were much more disastrous in both metal mining and quarrying than in coal mining. Falls of roof and ore cause more fatali-

TABLE III

ACCIDENTS IN MINES AND QUARRIES, UNITED STATES, 1916–30

TYPE OF MINE OR QUARRY	NUMBER KILLED PER THOUSAND 300-DAY WORKERS						NUMBER INJURED PER THOUSAND 300-DAY WORKERS					
	1916	1917	1925	1928	1929	1930	1916	1917	1925	1928	1929	1930
All coal mines	3.93	4.25	4.65	4.64	4.54	5.00						251.40*
Bituminous	3.88	4.33	4.79	4.90	4.63	5.26						
Anthracite	4.11	3.98	4.12	3.85	4.24	4.22						
All metal mines	3.62	4.44	2.99	2.50	3.03	2.92	250.64	240.97	283.53	205.61	200.11	167.86
Copper	3.64	5.88	1.94	3.03	3.03	2.76	319.58	313.35	350.62	220.99	223.83	193.48
Gold, silver and miscellaneous	4.05	4.03	3.83	2.60	3.66	4.49	190.79	172.51	307.42	268.72	269.36	239.69
Iron	3.41	3.54	2.54	2.16	2.98	2.68	240.17	227.54	159.43	98.13	89.58	81.42
Lead and zinc	3.14	4.09	3.32	1.62	2.08	1.63	263.09	272.99	468.07	295.65	238.29	176.55
Non-metallic mineral	3.00	2.48	1.71	2.13	2.29	0.75	144.70	123.58	165.40	168.60	168.05	138.25
All quarries, including outside works	2.26	1.83	1.78	1.46	1.65	1.53	175.62	185.14	169.67	129.95	128.14	108.23
Cement rock	2.38	2.09	1.78	1.05	1.20	0.86	248.83	277.73	103.55	48.76	43.48	34.10
Granite	1.86	1.54	0.96	1.17	2.49	1.44	143.99	189.73	202.52	181.48	163.85	143.06
Limestone	2.36	1.79	1.76	1.84	1.87	1.77	176.10	175.52	193.47	166.02	171.46	142.78
Marble	1.16	0.57	0.56	1.08	0.79	1.07	125.20	100.20	116.04	110.38	95.62	91.41
Sandstone and bluestone	1.28	0.99	3.32	1.02	0.39	2.79	127.86	118.89	200.31	160.50	134.99	121.51
Slate	2.62	1.31	2.60	1.24	0.67	0.47	85.00	112.04	168.98	158.87	164.55	152.14
Trap rock	4.45	2.61	4.13	3.13	4.07	5.30	237.84	222.92	324.87	205.78	218.93	188.34
All quarries, excluding outside works	2.32	2.00	2.28	1.99	2.18	2.47	158.63	162.95	195.02	162.46	172.48	155.06
All quarries, outside works only	2.15	1.53	1.22	0.99	1.18	0.80	206.06	223.81	141.06	100.34	89.21	71.76

* Statistics of non-fatal coal mining accidents were not computed until 1930.

Source: Compiled from United States, Bureau of Mines, "Coal-mine Accidents in the United States: 1930," *Bulletin*, no. 355 (1932), and "Metal-mine Accidents in the United States: 1930," *Bulletin*, no. 362 (1932).

ties than any other kind of accident in metal mines, accounting for nearly one third of all deaths. In quarrying, hauling and handling the quarried rock divided honors with falls of rock as the most important cause of fatalities. Machinery involves a much higher hazard in quarrying than in mining. For mining as a whole falls of roof and ore kill 2 to 6 times as many workers as explosions. Dust and gas explosions can be eliminated with moderate expense, but the idea must not be entertained that accidents will be brought down to the irreducible minimum when rock dusting, humidification and proper ventilation of coal mines have been effected to minimize explosions. So many factors contribute to the falling of roofs and ore that it is much more difficult and expensive to lower the accident severity rate from this cause.

Lack of uniform definitions of accidents and statistical methods makes comparisons for different countries extremely difficult. The imperfect statistics available, which are almost exactly comparable despite slight variations in the definition of "fatality" and in computing the number of full time workers, place the United States first in coal mining accidents (Table v); and the situation is approximately the same in other forms of mining. The fatality rate in American bituminous mines has declined little if at all, while the fatality rate in anthracite mines has increased; and the rate for both types of mines was in 1931 the highest since 1920. This is also largely true of gold and silver mining, although commendable progress has been made in accident prevention in other forms of mining.

The high accident rates in American mining are sometimes attributed to especially dangerous conditions. This explanation is scarcely tenable in view of the much deeper working in European mines with the much greater danger from flooding and the other hazards of deep mine operations. When the fatality rates are computed per million tons mined, the American showing is improved, especially for bituminous mines. American bituminous mines in 1930 yielded 289,000 tons of coal per man killed, while British mines produced only 277,000 tons, French about 200,000 tons, Belgian 155,000 tons and Prussian 129,000 tons per fatality. The greater efficiency of the machinery and methods used in American coal mines is often cited as an extenuating circumstance if not an actual justi-

TABLE IV

PERCENTAGE DISTRIBUTION OF FATALITIES BY MAJOR CAUSES OF FATAL MINING ACCIDENTS, UNITED STATES, 1916–30

	Falls of Overburden, Roof, Quarry Material, Ore or Coal	Explosives	Haulage and Handling of Rock, Ore or Coal	Falls of Persons	Electricity	Machinery	Gas and Dust Explosions	Other Causes
1916								
Metal mines	32.28	12.77	10.04	14.64	3.73	2.58	—	23.96
Coal mines	47.85	6.56	20.89	1.39	4.35	1.89	10.15	6.92
Quarries	19.08	16.18	19.66	8.09	4.05	16.76	—	16.18
1917								
Metal mines	26.17	9.27	10.33	13.15	2.23	2.00	—	36.85
Coal mines	45.63	4.08	22.17	0.78	3.56	2.41	13.35	8.02
Quarries	18.32	16.03	24.43	11.45	1.52	15.27	—	12.98
1925								
Metal mines	31.26	14.02	16.18	12.12	5.39	2.16	—	18.87
Coal mines	48.34	4.57	17.95	0.67	4.48	2.01	15.44	6.54
Quarries	22.82	13.43	16.78	10.07	4.02	18.12	—	14.76
1928								
Metal mines	32.24	7.69	14.65	12.45	3.67	2.93	—	26.37
Coal mines	49.08	3.40	18.48	0.41	4.27	1.79	17.28	5.29
Quarries	24.37	7.56	15.13	15.97	5.88	17.65	—	13.44
1929								
Metal mines	35.14	10.86	14.86	11.71	2.29	3.14	—	22.00
Coal mines	54.05	4.02	20.76	0.87	4.30	1.87	8.92	5.21
Quarries	15.08	13.49	20.64	9.52	4.76	17.46	—	19.05
1930								
Metal mines	30.63	14.39	11.44	14.39	3.69	2.58	—	22.88
Coal mines	52.50	3.78	17.55	0.24	4.26	2.86	12.80	6.01
Quarries	22.86	13.33	15.23	8.57	3.81	18.10	—	18.10

Source: United States, Bureau of Mines, "Metal-mine Accidents in the United States: 1930," *Bulletin*, no. 362 (1932), and "Quarry Accidents in the United States during the Calendar Year 1930," *Bulletin*, no. 366 (1932).

TABLE V

COMPARATIVE ACCIDENT STATISTICS FOR COAL MINES IN THE UNITED STATES, GREAT BRITAIN, FRANCE, BELGIUM AND PRUSSIA, 1922–30*

Year	United States			Great Britain	France	Belgium	Prussia
	Bituminous	Anthracite	Total				
	Death Rates per Thousand Full Time 300-day Workers						
1922	5.16	3.81	4.90	1.18	0.87	0.91	
1923	4.65	3.62	4.39	1.23	0.97	1.07	
1924	5.39	3.39	4.80	1.16	1.03	1.18	
1925	4.79	4.12	4.65	1.22	1.24	0.90	2.68
1926	4.86	3.37	4.50		1.09	0.97	2.38
1927	4.60	3.94	4.43	1.35	0.98	1.30	2.28
1928	4.90	3.85	4.64	1.27	1.12	1.02	2.07
1929	4.63	4.24	4.54	1.31	1.15	1.29	2.19
1930	5.26	4.22	5.00	1.30		1.23	3.09
	Production in Thousands of Short Tons per Death						
1922	251	182	240	259	186	165	
1923	289	183	267	245	186	144	
1924	254	177	238	257	176	127	
1925	284	155	260	247	150	173	107
1926	278	186	261	226	181	175	142
1927	297	164	268	257	201	130	151
1928	290	169	265	277	190	179	174
1929	314	153	278	277	200	148	176
1930	289	156	260	277		155	129

* This table covers both underground and surface employees. Where no figures are given no complete data are available.
Source: United States, Bureau of Mines, *Coal-mine Fatalities in August, 1932*, C. M. F. no. 14 (1932) Table 7.

fication for the appallingly high accident rates; but the fact is that the greater production per man per day in American mines is largely due to thicker veins of coal and shallower workings. More attention to safety of roofs and other conditions and less attention to big production per man would reduce fatal and disabling accidents without adding much if anything to the costs per ton of producing coal, including compensation for deaths and disabilities. Safety work is more necessary in mining than in other industries because the hazards to life and limb are highest. It is also more difficult because the hazards are so frequently regarded as unavoidable and mining operations are usually carried on where proper supervision and enforcement of safety laws and rules are difficult or impossible.

In most European countries mining legislation is more comprehensive and more strictly enforced than in the United States. All American mining states have mine safety laws ranging from fairly good to excellent, but the enforcement is usually far from satisfactory. The most important step to be taken in the mine safety movement is to make all mine inspectors civil service appointees and to transform the status of mine inspection from a political job to a humane and technical engineering job.

One necessity for the guidance of safety workers is more detailed and accurate statistics. The United States Bureau of Labor Statistics and the International Association of Industrial Accident Boards and Commissions have performed notable services in securing agreements on definitions of terms and methods of statistical computation of accident frequency and severity rates. The National Safety Council, an organization of employers, has done much to induce employers to accept the standards agreed upon and to report their accidents in accordance with these standards. The United States Bureau of Mines has helped state agencies in securing standard accident reports and at last has begun to compile statistics of non-fatal accidents. It is necessary that all mines and quarries should be required to report the man hours worked, all lost time accidents and the causes and results of such accidents. More complete statistics will help in the work of eliminating preventable accidents and will improve means of estimating the effectiveness of safety work.

Some progress has been made in reducing mining accidents. Credit for this in the United States belongs primarily to the state compensation acts and enforcing agencies, aided by the United States Bureau of Mines. This bureau's mine rescue work has given much publicity to the extremely hazardous nature of mining, especially coal mining, and to the methods of preventing most mine casualties. The efforts of individual employers and of the organization of employers in the National Safety Council to reduce mine and quarry accidents deserve high praise. Without compulsory legislation and active enforcement, however, it would have been impossible for the minority of enlightened employers effectively to decrease accident rates, especially severity rates, as fatal and serious accidents are most difficult to prevent because large expenditures are usually required.

ROYAL MEEKER

See: MINING; ACCIDENTS; ACCIDENTS, INDUSTRIAL; INDUSTRIAL HAZARDS; SAFETY MOVEMENT; WORKMEN'S COMPENSATION; LABOR LEGISLATION AND LAW.

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MINING LAW. Modern mining laws may be divided into two major groups. The first grouping has as its basis the assumption that minerals form an integral part of real property and that therefore only the landowner or someone given permission by him may prospect for minerals or exploit any mines discovered. In the second group the right to all minerals is reserved to the state and declared a royal prerogative. This right may take various forms: it may involve the state's direct right to mineral resources, so that it is entitled to begin mining operations without notice at any point either directly or through a third party to whom it has assigned its rights; or the state may have only the authority to establish a subjective right through an act of sovereignty by virtue of which the lessee, which may be the state itself, is permitted to exploit the mineral resources in a certain area. Such a lease may be at the discretion of the authorities, the latter selecting the bidder who seems most suitable (concession system); or there may be free prospecting for minerals, the person discovering a mineral deposit being entitled to a lease or to the property. The latter is the so-called system of free mining. Even where mineral rights are a part of real property they may be separated from landownership. The separation may be of a spatial nature, as in English law, the landowner transferring to the mining interests certain strata of his land; or a limited right, a *jus in re aliena*, may be set up, as in German law, permitting the mining of certain specified minerals on the plot of land.

The legal distinction between mineral rights vested in the state and those associated with landownership involves not only the person holding these rights but in at least equal degree the nature of the rights enjoyed. If they are associated with landownership they are like private land in general directly subject to private law. If they are the state's prerogative, however, no private rights are as a rule involved; there is rather a public prohibition of the exploitation of mineral resources. Even when the state enjoys such rights from the beginning or where in any particular case it or a private individual obtains such rights through governmental grant, there exists no immediate right over the minerals but rather a right of appropriation; that is, the exclusive authority to remove the minerals from the earth, convert them into movable chattels and thus obtain ownership of them.

Although these two systems are very different juridically, from the economic point of view the system of landownership mineral rights may approach that of the state prerogative very closely, wherever the state is a landowner. In such a situation the mineral rights of the state are based upon its ownership of the land and it can exercise them by mining the land itself, by granting certain persons the right of exploitation or, finally, by throwing open its land to prospecting and granting anyone discovering a deposit a claim to the transfer of the land or a right to the minerals found. On the other hand, when practically all land is privately owned, the differences between the two systems are important. If all minerals belong to the landowner, the mining interests must reach an agreement with him; as a rule this can be effected only upon the payment of large royalties, while frequently it is impossible to come to any terms. At best the state can coerce the refractory landowner by expropriation, as provided under certain circumstances in the British Mines (Working Facilities and Support) Act of 1923. Modern legal concepts, however, hold that such expropriation may be resorted to only in exceptional cases when required by public interest, while the landowner must receive compensation for the loss of his rights. But if mineral rights are a prerogative of the state, it may grant them without asking the landowner's consent. The question of confiscation is not involved, for the minerals never belonged to the landowner; the latter has therefore no claim to compensation for any loss of rights but solely for actual damages to the surface of the ground caused by the prospecting for new deposits or by mining operations. It follows that the system of state prerogatives facilitates considerably the discovery of new deposits.

Whether the free mining or the concession is introduced within the prerogative system or upon state land depends upon the extent to which governmental intervention in business is held desirable. Obviously where free mining obtains the state has but little influence, for it must allow everyone to prospect, granting the finder the right to the mine. The maximum allowable extent and content of the latter right are fixed in advance by law in order to exclude

any arbitrariness on the part of the authorities; this leads of course to schematism in administration. In the concession system, on the contrary, the state selects a qualified prospector and the best concessionaire; the concession's size and content and the charges upon it are fixed largely at the discretion of the authorities. Thus the latter can adapt the grant to the circumstances of the individual case, granting extensive rights, for example, to a powerful financial group that is ready to undertake the geological survey and mining exploitation of unexplored areas, while a small entrepreneur who plans to operate only a specific mine is given a correspondingly limited concession. On the other hand, the concession system involves the danger that an imprudent or corrupt administration may through ignorance, arbitrariness or chicanery repress business enterprise.

There is no fundamental difference between the legal aspects of the various systems, especially in regard to the transfer of mining rights. Wherever they are derived from landownership they are treated of course like the land; moreover they usually enjoy also the same legal character even in countries where mineral rights have been declared a prerogative of the state. Mining rights, such as ownership and concessions, granted by the state are treated exactly like real property; they are recorded in the land register and may be mortgaged or dealt with in any other way characteristic of real property. Sometimes the transfer of rights is made conditional, however, upon governmental approval. One legal difference between regalian and landowner mining rights is derived from the fact that mining is impossible as a rule without the use of the surface of the ground, which is necessary for shafts, hoists, plants to dress the ores, mine railways and the like. The right to use the surface of the ground exists directly when the mine owner and landowner are identical, and if the former derives his mining rights from the latter he acquires at the same time the right to any necessary use of the surface. This follows directly from a reasonable interpretation of the contract of sale, for it would be contradictory for the landowner to grant the mine owner the right to exploit the mine while denying him the opportunity to get at it. The situation is different in state prerogative mining. There the mine owner has been granted mining rights by the state without asking the consent of the landowner, and thus the state must aid the mine owner in obtaining the necessary use of the surface area if it cannot be secured by mutual agreement. This is ordinarily done by condemnation of the surface area, and in many cases provision is made for facilitating the usual process where mines are involved. Such laws proceed from the assumption that the promotion of mining lies in the public interest and that therefore expropriation for such purposes is always permissible, provided there are no special reasons of public interest against it in any individual case.

The legal basis upon which mining rests often determines the monetary charges upon it. Anyone deriving his mining rights from a private landowner owes royalties only to him and not the state; in regard to the latter he is subject solely to general tax legislation. Anyone who has obtained his mining rights from the state either because the state owns the land or because mineral rights are its prerogative has in many cases to pay special mining royalties.

The question of whether there is an obligation to engage in mining operations depends again upon the nature of mining rights. As a rule the landowner is not obligated to exploit his property for useful ends; mining or the refusal to mine when this right goes with the land is within his discretion, just as he has the right to let his land lie fallow. On the other hand, anyone who obtains his mining rights from the state must usually exercise them in order to retain them. In the age of mercantilism the state even claimed from its mining prerogative the right of detailed supervision of private mining activities, the so-called principle of direction.

Special forms of companies, such as the German *Gewerkschaft* and the mining partnership in Anglo-American law, have been developed for mining operations under both systems. Because of the indeterminate capital requirements involved in the industry they are usually characterized by the regulation that the partners may be called upon through majority vote for more money.

Irrespective of the legal basis for mining rights all civilized countries have established thorough regulations for the technical side of mining operations. They are founded upon the general sovereignty of the state, by virtue of which it is obligated to shield the lives and health of miners and of inhabitants upon the surface from danger and to protect the nation's economy against damage caused by reckless exploitation and similar abuses. Mining legislation as a rule does not apply equally to all substances taken from the earth but only to those requiring mining opera-

tions. Thus quarries, peat cutting, clay and gravel pits and the like are usually excepted from the safety regulations applicable to mining proper. Moreover they are included under the heading of real property even when valuable minerals, such as ores, salts, coal and the like, are part of the state prerogative. And even some of these, which are obtained only through mining operations, as, for example, potash salts, have sometimes been declared exempt from the prerogative, because their economic importance was not recognized at a time when the demarcation between prerogative minerals and those belonging to real property was fixed by statute. In some countries the non-regalian minerals have been subsequently declared a state prerogative in so far as private rights founded upon older laws do not exist.

The evolution of mining legislation as it occurs in the history of mining law depended largely upon whether or not the extraction of minerals was considered a normal use of the soil. Where it was so considered, there was no immediate occasion for depriving the landowner of it and mining law became merely a subdivision of the general land law. Special regulations were necessary solely because of the peculiar dangers of mining and were similar in nature to those regulating the use of a plot of land for manufacturing purposes. Where, however, mining was not so considered, the right to mine did not appertain to the land. This was particularly true when the extraction of minerals was in principle regarded as more valuable than the ordinary cultivation of the soil; the trend of such a development was to compel a differentiation between landownership and the rights of mineral extraction, for it was found that the private landowner's control of mineral resources made mining upon a large scale difficult.

In the ancient world among the Greeks and Romans mining was done largely upon the state domains. Operations were carried on either by the state or by its lessees, while in some cases a system approximating in its final results that of free mining developed upon the state lands; as, for example, in the Attic mines of Laurium and in the mining districts of Vipasca (Spain) under the Roman Empire. The extraction of minerals upon private land was of slight importance and was confined largely to quarries and the like. Thus there was no occasion to separate the rights of mining from those of land tenure or to assign the former to the state; nor is there any conclusive evidence that this was done. Two constitutions dating from 382 A.D. and 384 A.D. (*Codex theodosianus*: bk. x, ch. xix, sects. 10–11) may be cited to show that no such separation took place: they merely grant the mine operator the right to work a mineral deposit in an adjacent plot of land upon payment of the tithe and do not proclaim a general state mineral prerogative. Accordingly they do not exclude the landowner's right to extract any minerals which he may discover upon his own land.

State mining prerogatives developed about the eleventh century, chiefly in Germany. Germanic land law did not recognize any private ownership as unlimited in concept as that of the Roman law. All private property was merely a right of usufruct granted by the king or another feudal lord, and since the normal use of the soil consisted of agriculture the rights granted to the landholder went no deeper than did the plow. The interior of the earth belonged to the king, the final landowner; and the right to use it was a royal prerogative.

This evolution of a royal prerogative was aided by two economic factors: first, mining penetrated to ever increasing depths, becoming more and more of a specialized art of which the landowner was ignorant; secondly, the existing mines no longer satisfied the need for metals. There was therefore a demand for the opening of new mines, whereas agricultural land was still abundant. From this situation the theory developed that mining was more valuable than the ordinary cultivation of the soil. Finally, landowners could not be depended upon to open new mines, which could be done only by trained miners. The owners of the prerogatives proclaimed free mining to a steadily increasing extent, so that the miner could prospect for minerals and as soon as he discovered any could lay claim to a grant, getting the right to the extractable minerals within the area upon payment of a royalty. During the later Middle Ages this condition of prerogatives and free mining prevailed throughout Germany. The same juridic state of affairs was recognized in principle in France. It could, however, be only partially enforced in practise against the opposition of the large landowners. In the period of the absolute monarchy and of mercantilism the crown in so far as it was able to enforce its royal mineral prerogative abandoned the principle of free mining and endeavored instead to have the state monopolize all French mining in favor of individuals or certain companies.

Under Norman rule the royal mining prerog-

ative was recognized in principle even in England. It was undisputed throughout the kingdom for the mines royal, that is, for gold and silver, but the kings claimed it for baser metals as well. In the great Case of Mines under Queen Elizabeth the court recognized the royal prerogative as extending at least to those ores of base metals that contained admixtures of gold or silver. The acts of Parliament of 1688 (William and Mary, ch. 30) confined the crown's rights to gold and silver exclusively. Both royal prerogative and free mining existed with respect to tin mining in Cornwall, Devon and the Forest of Dean, just as under German law. With local exceptions, however, practically all minerals in England have been an attribute of landownership since 1688, as there are no gold or silver mines in the country.

In modern times comprehensive mining laws have developed. The oldest legislation of this sort is contained in the *Allgemeines Landrecht für die preussischen Staaten* drawn up at the initiative of Frederick the Great but not completed until 1794 and in the French mining law voted by the National Assembly in 1791. Both of these laws were, however, imperfect: in maintaining the direction system the Prussian law continued to evidence the spirit of mercantilism; the French law gave the mining operator too insecure a juridic position to permit his risking the investment of the capital necessary for modern mining. The French law of 1810, which is still in force, was the first law to recognize that modern mining requires two things: first, a secure legal basis for the erection of costly mining plants, to consist of irrevocably alienated mining property or at least of a concession granted for a number of decades; second, freedom from governmental tutelage—the limitation of the state's intervention to safety police measures. The law of 1810 developed from the ideas of economic liberalism and arose through the strong personal influence of Napoleon. Its basic principles were adopted in German legislation about the middle of the nineteenth century and were combined with the concept of free mining that had prevailed in Germany from the Middle Ages. This combination led to an unprecedented and excessive expansion of German mining; many more mines than were required were erected to produce the two minerals especially important for Germany, coal and potash. As a result at the beginning of the twentieth century free mining had to be annulled in large part for these two minerals.

The German or the French system or combinations of both have formed the basis of legislation concerning minerals in other European countries and in South America, where the prevailing laws are the Spanish and Portuguese with their wide application of the regalian principle. Contact with Anglo-American law and the need to develop mineral resources led in the course of the nineteenth century especially in Mexico to modifications in favor of the landowner and foreign miners. The present tendency, however, seems to be toward a return to the old Spanish system, and minerals formerly exempted from state ownership have been declared national property. Thus Chile has reserved petroleum and saltpeter to the state in so far as private rights have not been established; and Mexico, which expressly excluded petroleum from the state's prerogative as late as 1909, declared it in 1917 and in 1925 the property of the state where no positive acts of ownership had already been asserted. The Mexican law was modified to some extent in 1926 and 1927. The general trend indicated is due in part to the necessity of preserving certain mineral resources and in part to the desire to eliminate extensive foreign ownership and exploitation of native mineral lands. The value of the latter as sources of state revenue is also a determining factor in this policy. In Brazil, however, the influence of Anglo-American law is in the ascendant and an act of 1921 gives the ownership of certain minerals formerly vested in the state to the landholders.

The United States as well as the British dominions and colonies in America and Australia took over together with the common law the principle that minerals were *pars fundi*, even extending it to include the mines royal (gold and silver). The Roman-Dutch law applies in South Africa, but in this respect it agrees with the common law. A situation very similar to that obtaining on the continent of Europe was attained, as far as economic results were concerned, by virtue of the fact that most of the newly opened lands belonged to the state. These lands are known in the United States as the public domain and in the British Empire as crownlands.

Mining law in the United States is based upon the common law, the laws of the several states and federal legislation. The public domain is subject to the jurisdiction of the federal government; and the first legislation dealing with minerals located upon it was contained in the ordinance of May 20, 1785, which reserved one

third of all the gold, silver, lead and copper mines on the land deeded by the government. In 1807 the lead mines of Missouri were reserved from sale and were to be leased for short terms. The failure of the leasing system led, from 1829 on, to the sale of mineral lands. With the discovery of gold in California and other parts of the far west the absence of established law led, however, in the various mining districts to the growth of independent local regulations drawn up by the miners themselves. The disposition of valuable mineral lands was carried out under these laws, the basic doctrine of which was that discovery and development of a mine were the foundation of a property right in it; but the act of 1866 established free mining on the public domain and eliminated the payment of royalties for the exploitation of mineral resources, and these principles were followed in subsequent federal legislation. The old district mining laws and the right accruing under them were in large part recognized or formally reenacted by the state and federal governments. The mining operator making a strike stakes a claim and reports it to the authorities, thereby obtaining the right to protection of possession (possessory claim) and after the expenditure of a certain amount of labor to full ownership of the plot of land upon which the mine is located. The American law of the public domain has to a certain extent departed from the principle of the common law that minerals always belong to the owner of the surface land, for it grants the owner of a lode claim so-called extralateral rights, the authority to pursue beyond his boundaries into the adjacent plot a vein that has its apex in his own.

The extraordinarily diversified legislation of the British Empire makes considerable use of the principle of free mining on crownland, giving the free miner the right to a claim under provisions similar to the American law. In addition the concession system is often used, the state reserving the right to grant mining leases on crownland to suitable applicants at its own discretion.

After the rebirth of mercantilist ideas following the World War, there set in a reaction in mining law. Concession grants have been impeded by administrative practises and by amendments to the law, while their acceptance has been made dependent upon the assumption of oppressive fixed charges and governmental rights of supervision. This was the pattern of the Italian mining law of 1927.

The mining law of Soviet Russia is thoroughly permeated with liberal ideas. The law differentiates between known deposits and those which are as yet unknown. The former have become state property through the socialization of private property, being worked either by the state or leased to private entrepreneurs for exploitation. Free mining applies, however, to unknown deposits. Prospecting is legal and anyone discovering and uncovering a mineral deposit is entitled to a concession good until the deposit is exhausted.

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See: MINING; MINING ACCIDENTS; LAND TENURE; PUBLIC DOMAIN; CONCESSIONS.

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MINISTERIAL RESPONSIBILITY. *See* CABINET GOVERNMENT.

MINORITIES, NATIONAL.

The term national minority is applied to a distinct ethnic group with an individual national and cultural character living within a state which is dominated by another nationality and which is viewed by the latter as the particular expression of its own individuality. Although there are national minorities which actually constitute the ruling and privileged groups within a state, current usage has restricted the application of the term national minority to those which are in a defensive position.

The difficult problem of national minorities is an outgrowth of the development of modern nationalism. On the one hand, modern nationalism has served to strengthen the feeling of kinship of the national minority to its mother country and, on the other hand, it has brought about a greater and more passionate national assertiveness in the minority as a reaction to the oppressive and exaggerated nationalism of the ruling group. This form of national oppression has received support from the common recognition of the modern doctrine of popular sovereignty. The popular will, according to this doctrine, revealed through majority decisions at the polls or in representative assemblies, is decisive for all matters of state. Majorities brought about by this sort of political technique are, theoretically speaking, variable and dependent upon changes in political groupings or upon the success or failure of political leaders. The national minority, however, must be viewed as an essentially static element in the state and the adherence of an individual to a minority group as organic and non-political in nature. Thus the minority cannot gain new adherents as do other political groups and within the play of forces in the parliamentary-democratic structure has no chance to attain an eventual majority. There is great danger moreover that in all the crucial questions which seem really to unite the members of the group the national minority will find

itself confronted with the united opposition of all other parties and groups within the state. Although the minority may in itself be made up of a variety of subgroups reflecting different attitudes toward many political questions, it is the transcendence of such inner conflicts within the minority, when faced with critical national problems, which evokes more violent aggressiveness on the part of the dominant national group.

Many erroneous concepts as to the nature of a national minority are found in current literature. The concept which views all national minorities as the outcome of annexations or other territorial changes is false, for the origin of a national minority can often be traced to some mass migration in the remote past, subsequently reenforced by individual migrations. Likewise misleading is the view which applies the designation national minority only to groups which have aspirations to break away from an existing political state. There are states, clearly confronted with a minorities problem, whose minority groups entertain no such desires for political change. This erroneous concept of the nature of a national minority also precludes the existence of diaspora minorities for whom a territorially determined separatism is altogether out of the question. On the other hand, an attempt is made to consider the "loyalty" of an ethnic group as the distinguishing mark of its minority character and more especially to make the enjoyment of its minority rights dependent on the display of such a feeling of loyalty. By introducing a criterion which for practical purposes is unreliable the ruling nationality seeks to find a pretext whereby it can free itself from the international obligations which it may have assumed. Moreover the "disloyalty" of a national minority, where the charge can seriously be made, is in many cases much more likely to be the result of an immoral and illegal policy of political oppression on the part of the state than the sound basis for the continuation or the more energetic application of such oppression.

There are certain objective and subjective factors which may truly be said to constitute the characteristics of a national minority. Objectively, a national minority is distinguished by the possession of a common cultural and spiritual heritage which finds expression in a separate language, literature, press and theater as well as in a variety of organizations, parties and other forms of cultural and social activity. The extent and number of such organizations and institutions are naturally determined not only by the national minority itself but also by external conditions and forces, particularly by the latitude given by the state to the development of such communal activities. An apparent tranquillity produced by an oppressive state policy and designed very frequently to deceive international public opinion often conceals for the outsider the existence of a truly national minority life. In such cases secret societies, even though they constitute a minority within the minority, serve as objective symptoms of the force and persistence of the national individuality.

Before there can be an evaluation of such sociological manifestations as these organizations, secret societies and committees as symptoms of the distinctive life of the national minority, it must be ascertained how far they are genuine expressions of the psychic attitudes and characteristic subjective will of the national minority. Such attitudes are manifested positively in love and devotion to the national heritage and in the desire to perpetuate and foster it within the closed communal life of the national group. In order to be more than a mere ethnographic sport the national minority must possess at least a minimum of united will to defend its culture against all violent attacks and all dangers of assimilation. It must be conscious moreover of the impossibility of fusing its own traditions with those of the dominant nationality or of other nationalities within the state.

In addition to intolerance of the states and the fanaticism of the national groups other undeniable difficulties are involved in border line cases of minorities. Some national groups, because of numerical insignificance or the primitive or fragmentary character of their culture, cannot properly be termed national minorities. Where such a backward minority group, whether urban, agrarian or proletarian, has become joined with a national group far superior in power, wealth and richness of social and cultural organization, certain conditions have arisen which without the force of political pressure have made it impossible for the minority permanently to maintain itself. In such cases the minority does not undertake the struggle against assimilation or else soon gives it up. In contemporary European states the national minorities which are striving to attain a definite standard of minority rights and cultural autonomy are particularly anxious to be distinguished from these smaller groups. The postulate of cultural autonomy, in particular, has become associated

with certain criteria of cultural capacity for autonomy.

A distinction must be made between a national minority which exists in mere scattered groups and one which represents a geographically separated or historically differentiated division of a larger nationality possessing its own national state elsewhere. Where an important nationality is represented in another state by a very small or perhaps historically backward minority, the denial of the national affiliation of the minority with its mother country and its claims to the rights of a national minority is wholly unjustified. Another type of national minority is found in a state like Czechoslovakia, which is made up solely of minorities. The Czechs alone do not constitute a majority of the population. The German elements, which make up 23 percent of the total population, have been designated by President Masaryk as a "constituent factor" of the state and can only formally be called a national minority. The same is true of national groups in the so-called multinational states, where the state is not identified with any one nationality but occupies a neutral position above national and cultural differences.

Most of the attempted classifications of national minorities have been made only for purposes of propaganda. Entirely relative and, from a legal standpoint insignificant, is the distinction made by Polish writers between strong and weak minorities. Hungarian writers have distinguished between minorities created by territorial cession and those which have arisen through past migrations. Similarly, the Germans have introduced the classification of "permanent" and "accidental" minorities. The former include minorities which either because of geographical location or because they are made up of diaspora groups cannot seriously hope for eventual political reunion with their mother countries. The latter are those which, through political change brought about, for example, by a war, have lost contact with the mother country or, as in the case of the Italian irredenta, have not yet become united with it. Here the hopes for union with the mother country are possible of realization.

New majority-minority relations were created by the great shifting of populations brought about by nineteenth century industrialism. There appeared the phenomenon of a fluctuating population which never acquired a fixed home in the newly populated regions. Members of the dominant nationality of the state as a result often come to constitute a minority in particular districts and lay claim to the rights of such a minority. Settlements of soldiers, officials or seasonal agricultural laborers are also examples of accidental minorities and lead to a distinction between permanently domiciled minority groups and other uprooted minorities. In a formerly unilingual district such distinctions, apparently only theoretical and often overrefined, frequently result in practical consequences of great significance. For the recognition of the minority entails also the recognition of its language; legal and constitutional entanglements often result which complicate the administration, give rise to additional fiscal burdens and have other patent political and moral influences.

The phenomenon of non-territorial minorities presents obvious difficulties. During the Middle Ages, under the impact of the migrations, the principle of personality was recognized. Legal forms were contingent upon the personality of the individual, who could demand trial by his own national law even though he were outside the bounds of his native land (*quo jure vivis?*). In modern times, however, the territorial principle has become dominant and law is now more and more identified with state and territory. Switzerland presents a typical illustration of the limited degree in which national conflicts in multilingual states can be settled by territorial adjustment. Here the attempt was made to secure peace between the various nationalities by breaking up the land into numerous small and autonomous subdistricts. These districts represent for the most part ethnic units with a territorial differentiation of administrative organization. Under this system, however, there is altogether insufficient protection for the national rights of the mobile elements in alien cantons. Such dynamic factors as scattered settlements and mobility and fluctuation of population produce conditions which are not to be solved on a purely territorial basis but demand solution according to the principle of personality.

Modern efforts to guarantee the rights of national minorities by international law may be traced to earlier movements to protect religious minorities against intolerance and persecution by the incorporation of such provisions into peace treaties. In the final act of the Congress of Vienna in 1815 and at the Congress of Berlin in 1878 there are discernible, partly in connection with religious problems, attempts to safeguard the individuality of national groups living under alien national domination. Their practical re-

sults, however, were slight. Moreover the general cultural trend during the nineteenth century was not favorable to any theoretical justification of the rights of national minorities. In Germany the influence of Hegel's combination of the idea of *Volksgeist* with étatism was an important factor in preventing the development of such theories. In Italy Mazzini exerted a similar influence through his linking of the national ideal and the desire for a national state. In fact the "principle of nationality," set up as the slogan for European politics by Napoleon III, signified for non-territorial minorities a policy of persecution rather than one of toleration and liberation. It was no accident therefore that the problem of national minorities received most attention not in national states but in the multinational Hapsburg dominions. The personality principle of national rights, already developed by the bourgeois theoreticians Herrnritt and Bernatzik, was systematized and combined with Marxist ideology by the socialists Karl Renner and Otto Bauer. Their work has had significant influence on contemporary theories of minority rights, particularly on the doctrine of cultural autonomy. By means of the organization of parties, administrative offices and elections along national lines the attempt was made to counteract the tendency toward the break up of the Austro-Hungarian Empire. These important efforts of the Austrian Marxists received no attention among the German Social Democrats. They were, on the other hand, very actively discussed among the Russian socialists, while Polish and Russian Jews played a significant mediating role in this connection. It is well known, however, that the nationalities policy of Lenin and Stalin after the Russian Revolution and their return to attempts at a territorial solution are in a large measure to be understood in the light of their sharp opposition to the school of Renner and Bauer and of the friction between the extremist and moderate wings of the Marxian movement.

At the Paris Peace Conference the minorities problem came to the fore as soon as it appeared evident that the peaceful and satisfactory realization of Wilson's principle of self-determination was impossible, if for no other than geographical and territorial reasons. The regulations finally adopted regarding the minorities problem were the result of the activities of private Jewish delegations and expressed the instinctive opposition of Anglo-Saxon legal philosophy to the Romanic and continental concept of a centralized, absolute and omnipotent state.

The practical provisions for the protection of minorities were incorporated in the treaty between the Allied and Associated Powers and Poland. This treaty was made the basis for all the agreements with the other east European states, and states which later joined the League of Nations were obliged to make similar declarations as prerequisites for their admission. There came into existence by international guaranty a certain modicum of minority rights binding for sixteen European states, of which not one, however, is a great power or is in western Europe. By virtue of this guaranty by the League complaints against violations of minority rights are directed to the League and through it are also turned over to the World Court at The Hague. The national minority, not being recognized as a party to international law, cannot bring the charges directly before the League.

The material content of the provisions of the Paris Treaty regarding the protection of minorities is very meager. The protection of the constitutional and actual equality of all citizens "without distinction of birth, nationality, language, race, or religion" provides the nucleus of the system. The unrestricted use of any national language in private life is guaranteed as are also "adequate facilities" for its employment in the courts of law. Members of a minority group are given the equal right to establish and conduct at their own expense social, religious and philanthropic agencies as well as schools and other educational institutions and to have unrestricted freedom in the use of their own language and the practise of their own religion. The state is obligated, whenever there is a foreign language group of "considerable proportion," to make possible elementary instruction in that language and to allot for this purpose a fair portion of the public expenditures for education, religion and social welfare.

The question as to how far these minority treaties recognize the national minority as a collective organism is debatable. The granting of autonomy rights as demanded by the Jewish delegations was definitely rejected. The system as adopted represents rather a recognition of the cumulative individual rights of members of the minority group. The provisions are elastic and the obligations of the state are often so restricted with respect to territory that they are of no service to the minority as a whole.

The international regulation of the protection of minorities in the post-war period has not

gone beyond the limits set by the peace conference. A few bilateral treaties concerning the protection of minorities have been executed. The most important of these is the Geneva Convention of May 15, 1922, between Germany and Poland, which regulates for a period of fifteen years the minorities problems raised by the division of Upper Silesia. Membership in a minority with special reference to the problem of schools is here determined on purely subjective grounds. The individual has the right freely to declare his adherence to this or that national group and to receive the educational privileges which go with such a declaration. His decision is neither to be opposed nor to be subjected to any further investigation. Provision is made also for the creation of administrative agencies designed to settle all cases of dispute. These committees are composed of an equal number of representatives of each nationality and presided over by a neutral representative of the League of Nations.

Certain usages in procedure for the presentation of minority problems to the League have developed. Since the national minority does not possess the right to make an accusation itself, there has evolved a procedure for the presentation of petitions. Every incoming complaint is examined by the general secretary as to its formal *recevabilité*. It then is sent to the government of the state against whom the complaint is directed and the state is given the right to make its observations on the charges. The complaint is then examined by a committee of three, consisting of the president and two members of the Council of the League, as to whether or not the petition is to be presented to the Council. Experience has shown that such committees have usually sided with the state against the accusing minority and have thus hindered the League from fulfilling its function. According to von Truhart 314 complaints coming from nineteen nationalities in thirteen states were presented to the League during the period between 1920 and 1931; of these only twenty-one finally reached the League Council. In no single case did the Council give the minority its full due. Even such shocking instances as the agrarian expropriations in Latvia and the Polish punitive expeditions against the Ukrainians in eastern Galicia were completely ignored by the League. Growing disillusionment and bitterness against the League have developed among the minorities, which were very evident in the sessions of the Nationalities Congress.

The lack of concern on the part of the Leagu with regard to one of its most important fun tions is to be explained by a combination factors. The actual content of the minoriti treaties is not only unsatisfactory but lends itse to too flexible interpretation. The indifferen of the League bureaucracy, the hesitation of th members of the Council in the face of politic complications, the protracted formalities of pr cedure, the absence of a standing minoriti commission which could by its own investig tion arrive at an independent and unbiased vie of the causes of conflict, the persistence of ha engendered during the war—all these conditio have in practise rendered ineffectual the League guaranty of national minority rights, althoug the total absence of any international supe vision, it is true, might possibly have led to sti more flagrant nationalist excesses against m norities than those that have thus far occurre Suggestions for reform of the system of m norities protection are therefore limited for th most part to expediting and providing great publicity for the preliminary procedure, to th creation of a permanent minorities commissio and to the more general application of the pr tective obligations. Among the states which hav assumed these post-war obligations there ar on the other hand, strong tendencies to thro off their commitments at the first opportun moment. The weakening of the authority of th League of Nations, apparent along other line also jeopardizes the stability of the whol Geneva system of minorities rights.

In view of these considerations the questio has repeatedly been raised as to whether or n the Versailles system has done more harm tha good to the cause of minority rights. The sub ordination of the state to international regulatio and the preferential treatment accorded to in dividual states have been viewed as oppressiv and have served only further to inflame the na tionalism of the ruling group and to render mor difficult an agreement with the minority. Enor mous agrarian expropriations in most of th eastern states, mass closing of schools, confisca tion of churches and clubrooms, unpunishe public terror, press restrictions, the preventio of free election propaganda and the falsificatio of statistics and election results are but a fe typical illustrations of minority complaints.

Few effective reforms have been attempte with the view of stopping up the sources o dissatisfaction. The general poisoning of th political atmosphere as well as the interna

weakness of the newly created states has thus far stood in the way of such attempts. Some efforts at a constructive solution of these difficulties are revealed in the school legislation in Prussia, in the experiments in local administration in the compact German areas in Czechoslovakia and in attempts at cultural autonomy in Estonia and school autonomy in Latvia. Hungary and Rumania have endeavored only casually to bring the minority groups into the state administration, chiefly by means of special ministries or state secretaries for minority problems. In Hungary, Latvia and Czechoslovakia representatives of the minorities have at times occupied places in the cabinet. Such instances, often exaggerated for propaganda purposes, do not, however, justify a belief that the minorities problem has been solved satisfactorily in any of these countries. Numerous crises everywhere have revealed how little has been attempted in the way of a real constructive and effectual solution of the problem. The situation in the Balkans, particularly with reference to the still unsettled Macedonian question and the internal situation in Jugoslavia, is beset with the most dangerous potentialities.

Attempts at the solution of the minorities problem in the Soviet Union are quite unique. According to the census of 1926 there are in the Union of Soviet Socialist Republics approximately 185 ethnic groups speaking 147 languages. The Communists have consciously worked toward mobilizing this motley array of nationalities against capitalist society. These efforts are conditioned by fundamental Marxist principles and operate on the basis of the principle of territoriality. The Soviet Union is divided into republics and autonomous districts and the attempt is made, especially in the southern and eastern regions, to attach a sentimental side to the social revolution by an artificial stimulation of national consciousness among primitive peoples. This has served also to fill the Orient with a revolutionary spirit and to provide the colonial peoples throughout the world with a slogan for their revolt against the dominant classes and nations.

Minorities have often attempted to wring concessions from ruling states by a combination of their forces, as, for example, in the case of the minority bloc organized for a short while in the Polish Sejm. More permanent in character are the efforts to create some form of international cooperation of minorities. The first such organization was the Francophile Union des Nationalités formed in 1912 in Paris by the Lithuanian J. Gabrys and the Frenchman J. Pélissier. During the World War the center of the movement was shifted to Switzerland. Nationalities congresses were held in 1912 and 1915 in Paris and in 1916 in Lausanne. It became increasingly clear, however, that the realization of the progams of this movement, based as it was on the old nationality principle, would run counter to the interests of the great powers, especially Great Britain. France too lost all desire to support these activities, and shortly after the World War this movement, which had no particular interest in the problems of national minorities, disintegrated.

A new organization was formed in 1925 through the activities of the Baltic German Ewald Ammende, who succeeded in bringing together all the organized minority groups in Europe outside of Soviet Russia. Annual congresses were held from 1926 to 1931 in Geneva and in 1932 in Vienna. The congress, presided over continuously since its inception by the former Slovenian deputy in the Rumanian Parliament, Josip Wilfan, has rendered an important service in propagating the idea of cultural autonomy.

Resort to the international guaranty of minority rights must necessarily lead to the revival in a new form of the long contested principle of intervention. The leaders of the minorities become accustomed to seek protection of their rights outside their own states and before an international tribunal. Even those who deem such procedure to be unavoidable under the circumstances cannot deny that it produces a severe psychological strain on the relations between the minority and majority and is likely to lead to retaliation against the minority, especially by the executive power. Although it is highly desirable that the inadequate system for the protection of minorities should be reformed and perfected as far as possible, there is unanimity of opinion among the minorities that it provides only an expedient of last resort and that any satisfactory regulation within the state is to be preferred to such ineffectual external control.

Remedies based on constitutional changes within the state are, however, also only partly effective. The revolution in the political structure of eastern Europe has brought with it many disastrous consequences for the minorities. The very dissolution of large political, cultural and economic units into mutually mistrustful and hostile smaller states has given rise to innumer-

able difficulties. The creation of a host of new conditions and regulations in the fields of law, currency, tariffs, markets, sources for raw materials, and education has served to concentrate the effects of the general crisis on the national minorities in particular.

Only rarely has a radical solution of the minorities question through the exchange of populations been attempted. It was tried systematically by Greece and Turkey, resulting in enormous sacrifices in life and health. There were also one-sided exchanges of population between Poland and Germany and between Hungary and its neighbors, as a consequence of which many Germans and Magyars were forced to return to their mother countries. It is uncertain whether any technically better system can be arranged in the future for the mass shifting of minorities, which has thus far always been contrary to the will of the population concerned. In all cases there is a risk that such measures may constitute an assault upon the sense of attachment to the home and a danger to the organic health of the population. Measures of this sort, which always reappear in political programs, usually run counter to the most elementary humanitarian principles and betray no respect for an organically developed national group.

Modern advances in communication have made possible a greater amount of spiritual contact between minorities and the mother country; the question as to how far political relations between them is legitimate is a matter of controversy. The distinction between political and non-political in this connection is fraught with much practical difficulty. The enormous extension of the competence of the state into cultural and economic spheres has considerably decreased the sphere of the non-political. Moreover, although the nationalist struggles take place over questions which may be termed non-political, they are nevertheless imponderables which are indirectly of tremendous significance for the minority policy.

The conflicts engendered by minorities problems always threaten to bring about international complications. The solidarity of national groups regardless of political frontiers has become so significant a psychological factor that governments can no longer disregard it as they could in Bismarck's day. Such difficulties moreover cannot be solved by the traditional methods of the old diplomacy; nor do they come within the sphere of international or constitutional law. They can be dealt with only through a new and independent body of law dealing with corporate groups (*Körperschaftsrecht*) and based upon investigations into the national group as a personality and into the peculiarities of its national character. But while such a body of law may be recognized, protected and guaranteed by the states or by the society of states as the bearer of the *jus gentium*, it cannot be produced by them. The question therefore as to whether the legal problems of national minorities are more national than international is only relative and must be determined for each individual case. Fundamentally this alternative is irrelevant. As a result of the dominance of the principle of the omnipotence of the state, it is the state which must develop these new legal forms of minority life. Europe is now faced with a restoration of the old state absolutism with the additional factor that the system of plebiscitary democracy of the majorities has taken the place of the formerly neutral monarchy. The fundamental attack upon the theory of state sovereignty represented in some of the currents in international law, which is responsible for the creation of the League of Nations, has broken down and has made way for the intensification of the theory of sovereignty and the principle of state omnipotence. This has produced a state of extreme danger for the national minorities, which are being forced into a position where they will not only come to represent the interests of their own nationality but will become the guardians of a great and decisive political idea. The consequences will reach far beyond the particular question of national minorities; scarcely a problem in western culture will remain untouched by it.

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See: NATIONALISM; NATIONALITY; IRREDENTISM; MAJORITY RULE; MINORITY RIGHTS; AUTONOMY; SELF-DETERMINATION, NATIONAL; FEDERALISM; REGIONALISM; BOUNDARIES; ETHNOCENTRISM; ETHNIC COMMUNITIES; INTOLERANCE; PERSECUTION; MASS EXPULSION; NEAR EASTERN PROBLEM; DIASPORA; JEWISH AUTONOMY; ANTISEMITISM.

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MINORITY REPRESENTATION. *See* MINORITY RIGHTS; PROPORTIONAL REPRESENTATION.

MINORITY RIGHTS. Political history, in all but the very recent period, is a record of the successful attempts of a comparatively small minority of the population to impose its scheme of government and its norms of statecraft on the unprivileged masses. In the aristocratic and oligarchic republics of antiquity and the Middle Ages the minority governed directly in its own interests; with the rise of a centralized autocracy minority privileges became contingent upon the favor of the monarch. In either case the existence of a privileged minority was taken for granted, with a few scattered exceptions, until the victories of democratic theory and program in the eighteenth and nineteenth centuries (*see* MAJORITY RULE). Today there is no nation which at some stage of its recent history has not experienced the power of the majority in formulating the social and economic policy of the entire collectivity and in regulating the conduct of the individual members. As de Tocqueville prophesied in the early stages of the democratic movement, the dominant majority has so ruthlessly crushed all opposition that resistance to the *vox populi* exacts more courage than the older forms of rebellion against the despotic autocrat.

The opposition, which has manifested itself in a variety of quarters against the so-called "tyranny of the majority," has taken a number of forms. First of all there was the group of reactionaries, headed by Burke in England, de Maistre in France, Adam Müller in Germany and Gentz in Austria, which sought to preserve the older concept of privilege by undermining the mechanistic and quantitative presuppositions of the revolutionary ideologists and legislators. Their emphasis on the mystical rather than the rational nature of the social organism and on the non-cataclysmic process of history has been echoed repeatedly in the subsequent period; and as in the case of its early exponents this rationalization of minority rights has not been altogether free from the charges of special pleading. Gierke's version of organismic theory and historism, although elaborated quite logically in the course of his attack on the "atomistic" preoccupation with mechanical number, placed a serviceable ideological weapon in the hands of the Prussian aristocracy and plutocracy in their resistance to agitation for democratic reform. Jellinek's pioneer treatise, *Das Recht der Minoritäten*, may likewise, in view of the concern of the author over the fate of the German element in former Austria, be somewhat discounted as an *oeuvre de circonstance*, although the emphasis has clearly shifted away from the older type of privileged minority to the dilemma of national minorities (*see* MINORITIES, NATIONAL).

Allied to this group of antirevolutionary, antidemocratic political theorists are the intellectual aristocrats, genuine ideologists like Kant, Humboldt, Schlözer and Fichte, who rebelled at the presuppositions of the arithmeticians as to the dwelling place of ultimate social and political wisdom. "What is the majority?" asks Schiller testily, in a manner prophetic of Nietzsche. "The majority is the negation of reason. Understanding has always been confined to the few. . . . Where the majority is triumphant and stupidity is the final arbiter, the state sooner or later must go under." Ibsen, epitomizing in the character of Doctor Stockman the antipathy of a later generation to prevailing bourgeois ideals, reviled the majority as always wrong. Roscher, typifying the reaction against classical

bourgeois economics, attempted to exorcise the new monster-tyrant: omnipresent, ruthless and irresponsible, with countless eyes and ears and hands and of superhuman physical strength.

Within the ranks of the democratic movement itself the principle of majority rule has found numerous opponents. To intransigent individualists like Benjamin Constant, Laboulaye, Rotteck and Herbert Spencer the "divine right of parliaments," basing itself on the mandates of a numerical majority of electors, represented but an infinitesimal advance over the older type of authoritarianism. As a result the cause of minority rights frequently overlapped throughout the nineteenth century with individualism, although in the strict sense of the word a minority implies some less volatile and more ponderable unit than a minority of one.

Moreover in the actual process of setting up new constitutions the most orthodox reformers were not unmindful of the difficulties involved in reconciling the basic democratic dogma of the *volonté générale* with the equally basic democratic premise of the fundamental rights of the individual. Most of the early contract theorists had insisted that in matters involving the natural rights of the citizen the decision should be unanimous, and even Loyseau and Hobbes had recognized that there were certain primordial rights not subject to change by ordinary legislation. The distinction between ordinary legislation and constitutional enactments involving more fundamental questions of natural rights was first applied in the provisions regarding amendments to the federal constitution and to those of the states in the United States. As a compromise between the ideal of unanimity and the efficiency of simple majority decision a qualified majority composed of three fifths, two thirds or three fourths was specified. Other features of the American political system—such as the veto power of the executive, which can be overridden only by a two-thirds majority, the system of representation in the upper house according to state or county units rather than numerical population, the power of the courts to declare invalid ordinary legislation that does not conform to the provisions of the fundamental constitution—represent early efforts, subsequently imitated in other countries, to reach a compromise between ordinary majority rule legislation and protection of fundamental minority rights.

The early political controversies of the United States illustrate likewise the peculiar aspect which the antimajority attitude may assume in a federalistic state. The question of the rights of a minority of individual citizens tends to be replaced by the question of the rights of a minority of component units. Calhoun's systematically formulated thesis of the "concurrent majority," which repudiated the prevailing technique of arithmetical tabulation and insisted on unanimous acceptance by all the minority units, represents a reinvocation of the older postulate of unanimity in the interests of state sovereignty and ultimately of an economic institution. The ideal of unanimity has been invoked also by the Polish political thinkers Swiętochowski and Lutosławski, who have sought to eulogize the principle, if not the practise, of the old Polish *liberum veto*.

The actual working out of democratic ideology and program revealed in two other spheres rather serious inadequacies in the principle of majority rule. Even after the entire population had been accorded the suffrage, it was still apparent that the political opinions and economic demands of vast sections of the people remained to all intents and purposes inarticulate. The system of representation worked out by the early democratic institutionalists became the target of attack by numerous reformers whose primary aim was somehow to secure representation in the legislative assemblies for the voters whose candidate had suffered defeat in the local election. While the various types of proportional representation (*q.v.*) seek to preserve the essential features of the existing framework by guaranteeing to each minority a number of seats corresponding to its numerical strength, the champions of functional representation (*q.v.*), despairing of the atomistic character of the democratic type of legislative bodies, recommend modified or altogether new institutional agencies which will correspond more nearly to the pluralistic economic groupings of present day society. The basic affinities between these two pro-minority systems is indicated by the fact that Léon Duguit found little difficulty in making the transition from the camp of functional to that of proportional representation; while Raymond Saleilles with equal facility reversed the process.

Intimately related to the question of the rights of electoral minorities is that of the rights of minorities in the legislative assemblies; a minority of representatives may be rendered, to all practical purposes at least, as inarticulate as a minority of electors. Where, as on the continent, the working of the party system presupposes an

omnibus majority, synthetically arrived at by a process of bargaining between the various minority blocs, each group is afforded an opportunity of becoming articulate. In a two-party or even three-party system, on the other hand, the minority group of representatives is expected, at least according to the precept voiced by Cobden, to rest content with its one prerogative; namely, that of winning enough adherents to transform it into a majority. Although, as Redlich has pointed out, the conventions of parliamentary procedure are aimed in large part at the protection of such minorities and although momentary influence may be gained, as was the case with the Parnell minority under Gladstone, by strategic ad hoc alliances, the most effective weapons which parliamentary minorities have grasped in the protection of their rights have been the threat of withdrawal from the legislative sessions and parliamentary obstruction particularly in the form of filibusters or occasionally, as was the case with the German minority in the Austro-Hungarian assembly, by the display or threat of physical force.

The premises of the majority rule principle have been contested not only within the ranks of the democratic movement itself and by the nostalgic champions of the prerevolutionary order but also by the spokesmen of broader social programs which sought to go beyond the liberal compromise of the eighteenth century. To early utopian socialists, like Proudhon, conscious of the overwhelming antipathy of orthodox political groups, democracy was synonymous with the "Tyranny of the majority." While the early English socialists accepted most of the democratic premises and agitated for universal suffrage, continental socialism, although realizing the value of the legislative assembly as a platform for propaganda and agitation, has tended rather to discount the benefits to be derived from a parliamentary majority composed of bourgeois exploiters. The conception of the dynamic class conscious minority, which in the interests of the true majority of the population should overthrow the democratic state, shifted the emphasis from the theoretical rights of the minority to the active responsibilities of the minority. The idea of the dynamic élite, as set off against the inert majority comprising the masses, has been systematically elaborated not only by Sorel and the syndicalists but by such disparate groups as the "integral" nationalists stemming from Barrès and the disciples of Pareto who set up the corporative state of Fascist Italy. Although the emphasis in all of these later antidemocratic movements is on the superior *élan* and efficiency of the minority, the assumption of rights is throughout implicit.

LADISLAS KONOPCZYŃSKI

See: MAJORITY RULE; DEMOCRACY; DICTATORSHIP; MINORITIES, NATIONAL; INDIVIDUALISM; REPRESENTATION; PROPORTIONAL REPRESENTATION; FUNCTIONAL REPRESENTATION; FEDERALISM; REGIONALISM; PARTIES, POLITICAL; VOTING; PASSIVE RESISTANCE AND NON-COOPERATION; REVOLUTION AND COUNTER-REVOLUTION; PROCEDURE, PARLIAMENTARY; OBSTRUCTION, PARLIAMENTARY.

Consult: Calhoun, John C., *A Disquisition on Government*, ed. by R. K. Cralle (Columbia, S. C. 1851) p. 1–107; Jellinek, G., *Das Recht der Minoritäten* (Vienna 1898); Saripolos, N., *La démocratie et l'élection proportionnelle*, 2 vols. (Paris 1899) vol. i; Starosolski, W., *Das Majoritätsprinzip*, Wiener staatswissenschaftliche Studien, vol. xiii, no. ii (Vienna 1916); Ruffini, F., *Guerra e riforme costituzionali* (Turin 1920); Haymann, F., "Die Mehrheitsentscheidung, ihr Sinn und ihre Schranke" in *Festgabe für Rudolf Stammler* (Berlin 1926) p. 395–476; Ruffini Avondo, E., *Il principio maggioritario, profilo storico* (Turin 1927); Konopczyński, W., *Le liberum veto, étude sur le développement du principe majoritaire*, Institut des Études Slaves, Bibliothèque polonaise, vol. ii (Paris 1930).

MIQUEL, JOHANNES VON (1828–1901), German statesman. Miquel's father was of French-Portuguese, his mother of lower Saxon stock. This double inheritance may account for the many sided development of his intellectual career, ranging from youthful communism through the national liberalism of the Bismarck era to the agrarian conservatism of his later years. In his brief period of contact with Marxian thought he learned to view political and social doctrine in the light of the ever changing forms of economic organization, while his early separation from the economic materialism of Marx released this historical relativism for positive participation in the actual affairs of the state. A National Liberal politician at the time of the founding of the empire, Miquel was thus able to be the chief sponsor of the constitutional provisions of 1867 which assured the rights of parliament in opposition to Bismarck and at the same time to collaborate with the latter in the task of building the empire, particularly in welding the divergent parts of Germany into one legal entity. His conservative turn began with his habituation to the independence of thought and action which he acquired as chief burgomaster of Osnabrück and Frankfort. Finally, his early sympathies with the agrarian class made him receptive to the protective tariff orientation

of Bismarck, which in turn influenced him still further in the direction of political conservatism.

Miquel's greatest achievement, however, was the Prussian tax reform enacted in 1891–93, which combining liberal ideas with conservative foresight in the introduction of income and property taxes was socially beneficial in that it eased the burden of the poorer classes without risking any too radical innovations. His attempt to reform imperial finances failed, but he was successful in disentangling those of the individual state from local finances. Although he was closely allied with the Prussian conservatives he sought in vain to restrain their extreme agrarian demands and finally passed on to his successor Bülow the task of reconciling the interests of rapidly advancing industry with the preservation of agriculture.

HANS HERZFELD

Works: *John von Miquels Reden*, ed. by W. Schultze and F. Thimme, 4 vols. (Halle 1911–14).

Consult: Guhl, Wilhelm, *Johannes von Miquel, ein Vorkämpfer deutscher Einheit* (Berlin 1928), with bibliography; Mommsen, Wilhelm, *Johannes Miquel* (Stuttgart 1928).

MIR. *See* VILLAGE COMMUNITY.

MIRABEAU, COMTE DE, HONORÉ GABRIEL RIQUETTI (1749–91), French statesman. At the outbreak of the French Revolution the undisciplined but gifted son of *l'ami des hommes* had traveled widely and given some indication of his restless genius in a number of writings, including *Des lettres de cachet et des prisons d'état* (written in 1778; published in 2 vols., Hamburg 1782), *De la monarchie prussienne sous Frédéric le Grand* (written in collaboration with Mauvillon; 4 vols., London 1788) and various studies of such social and economic problems as the discount bank, the navigation of the Scheldt, the Negro traffic and the condition of the Jews in France. His notorious reputation, acquired as a result of numerous scandals and sojourns in prison for debt or other offenses, outweighed his capacities in the eyes of the nobility of Aix-en-Provence, who refused to consider his candidacy for the Estates General. He succeeded, however, in winning election by the third estate. In the assembly of that order at Versailles he soon became an outstanding personality, rivaled only by Sieyès. From the first his fiery speeches and brilliant repartee drew the sympathy of the nation, and his popularity became permanently established by his famous oration of June 23, when with Bailly he led the struggle for the union of the orders into a single assembly.

Mirabeau's leadership of the National Assembly (1789–91) represents the irrepressible authority of superior powers overriding obstacles imposed by envious colleagues. His amazing fund of information, supplied partly by his early travels, partly by a circle of willing allies—Clavière, Étienne Dumont, Reybaz of Geneva, Samuel Romilly, Abbé Lamourette, his devoted secretary Pellenc—made the tireless Mirabeau an indispensable counselor on all questions of policy, whether they affected the constitution, finance, the church, foreign affairs or national economy. Perhaps his supreme asset was his oratorical genius, which transmuted the speeches prepared for him by lieutenants. Scarcely less striking, however, was his diplomatic skill, which he had ample opportunity to exercise after the Assembly, in order to shackle his influence, passed a decree in November, 1789, barring deputies from ministerial posts. The complete separation of powers thus established virtually forced Mirabeau, who was keenly conscious of the necessity of cooperation and compromise between legislature and executive, to turn to political intrigue. Finally, for a financial consideration he became the king's secret adviser. The king's bribe, tendered in the hope that Mirabeau's tremendous popularity might be made available for the royal cause, "bought" him but, according to his own expression, did not cause him "to sell himself." Sacrificing no essential element of his original program he steered a difficult course, counseling the monarch in statesmanlike letters delivered through Comte de La Marck and managing to direct the Assembly by obtaining a preponderant influence in its committees, which in fact controlled the government.

From June 23, 1789, until his early death in April, 1791, Mirabeau's general policy aimed consistently at the reconciliation of the traditional monarchy with the new liberty. He remained throughout a sincere champion of the oppressed, of complete religious and intellectual freedom, of equality before the law; the eloquent preamble of the Declaration of the Rights of Man was apparently his work, although he had at first opposed its promulgation as inopportune. It was, however, characteristic of his extraordinary sense of moderation that he combined with liberalism a deep appreciation of the social need for authority and order and that from the first he favored the conferment of extensive

powers upon the executive. The realism displayed in the delicate equilibrium between these extremes constitutes his claim to greatness. While in certain matters, such as religious policy, he was more liberal and in others, such as the right of war and peace, more favorable to the monarchy, his ideas inspired the principal acts of the Assembly. As president of the diplomatic committee, which directed foreign policy over the head of the king's minister Montmorin, he pursued a policy of realistic pacifism, reflecting an admirable balance between patriotism and the humanitarian cosmopolitanism of the *philosophes*. He recommended the conciliation of the German princes of Alsace by indemnities for the abrogation of their seigniorial rights and on several occasions prevented the annexation of the papal state of Avignon—policies in line with his major objective of averting complications which might hamper internal reform.

Mirabeau was never sufficiently free from petty obstructions to exert the full powers of his mind. With the abrupt termination of perhaps the finest *carrière manquée* in history the illusion of a possible compromise between monarchy and liberty vanished and the revolution approached a more radical stage, at the same time that it was deprived of its most stabilizing influence.

PHILIPPE SAGNAC

Other important works: *Lettres originales de Mirabeau écrites du donjon de Vincennes pendant les années 1777, 1778, 1779, 1780*, 4 vols. (Paris 1792); *Lettres du comte de Mirabeau à un de ses amis en Allemagne (1786–1790)*, ed. by J. Mauvillon (Brunswick ? 1792); *Correspondance entre le comte de Mirabeau et le comte de La Marck (1789–1791)*, ed. by A. de Bacourt, 3 vols. (Paris 1851). Mirabeau's journal, *Courrier de Provence pour servir de suite aux lettres du comte de Mirabeau à ses commettants*, was published in 17 vols. (Paris 1789–91).

Consult: Peuchet, J., *Mémoires sur Mirabeau et son époque*, 4 vols. (Paris 1824); *Mémoires biographiques, littéraires et politiques de Mirabeau, écrits par lui-même, par son père, son oncle et son fils adoptif*, ed. by L. de Montigny, 8 vols. (Paris 1834–35), English translation, 4 vols. (London 1835–36); Loménie, Louis L. de and Charles de, *Les Mirabeau*, 5 vols. (Paris 1879–91); Stern, Alfred, *Das Leben Mirabeaus*, 2 vols. (Berlin 1889); Erdmannsdörfer, B., *Mirabeau* (Bielefeld 1900); Guibal, G., *Mirabeau et la Provence en 1789*, 2 vols. (vol. i 2nd ed., Paris 1891–1901); Joly, A., *Les procès de Mirabeau en Provence* (Paris 1863); Fling, Fred Morrow, *Mirabeau and the French Revolution* (New York 1908); Sagnac, Philippe, "La Révolution" in Lavisse, Ernest, *L'histoire de la France contemporaine*, 10 vols. (Paris 1920–22) vol. i, p. 275–77; Aulard, A., *Les orateurs de la Révolution*, 2 vols. (2nd ed., Paris 1905–07) vol. i.

MIRABEAU, MARQUIS DE, VICTOR RIQUETTI (1715–89), French social and political critic and physiocrat, generally called "the elder Mirabeau." In harmony with the tradition of his family Mirabeau pursued a military career until 1743, when he retired with the cross of St. Louis and of Malta. Purchasing the estate of Le Bignon near Nemours and a *hôtel* in Paris, he devoted himself henceforth to political economy. As earlier in Provence he had associated with Vauvenargues, the poet Lefranc de Pompignan and the procurer general Monclar, so at Paris from 1765 on his salon was a meeting place for the outstanding *économistes*—Quesnay, Turgot and Dupont de Nemours.

At the outset of his career as a student Mirabeau followed the great opponents of the policy of Louis XIV—Boisguillebert, Vauban and Fénelon. His first work, *Mémoire concernant l'utilité des états provinciaux* (Rome, France 1750), was a critique of the system of centralized administration through the agency of the intendants—of the viceroys, as Law had called them—and a eulogy of the provincial estates of Brittany, Languedoc, Burgundy and Provence. The extension of his interests to the broader problems of social economy was signalized by the appearance of *L'ami des hommes, ou Traité de la population* (1756). This work, which presented a comprehensive system antedating the publication of Quesnay's system, is his masterpiece; Mirabeau was thereafter known as *l'ami des hommes*.

"The state is a tree; the roots are agriculture; the branches are industry; the leaves are commerce and the arts." In these characteristically graphic terms the book states a thesis, quite accurate for France —the organic dependence of all the various components of the nation upon agriculture. To revive agriculture, it continues, the soil must be divided: there are far too many large proprietors who consume their revenues as absentees in the cities or dissipate them on useless embellishments—kitchen gardens, hothouses, orangeries—without giving a thought to production. Mirabeau deplores the decline of the "poor nobility," castigating the court aristocracy as "a true leech" upon the state. Luxury destroys morals and the latter are the "strings of the political instrument, whose laws are but their sounds." Religion, domestic virtues, patriotism but above all labor form the props of society. "Every man who lives in idleness is an obstacle to the state"; thus he defines and condemns the rentier. Because the national debt

"drains" the substance of the laborers Mirabeau recommends its redemption; an incidental benefit would be the lowering of the interest rate in private transactions. Mirabeau the provincial inveighs against gluttonous Paris, declaring that a portion of the wealth there accumulated should rightly be returned to the rural districts. He reverts to his strictures against the intendants, whom he depicts with much vehemence but considerable injustice as omnipotent intruders attaining power while still immature and beginning their pernicious careers by making fatal experiments.

The conception of international relations presented in *L'ami des hommes* recalls Abbé de Saint-Pierre and other eighteenth century cosmopolites. "The entire globe is contiguous, all countries are neighbors, all men are brothers." Huge armies, he says, ruin governments. But like his brother the bailiff, who was a well known seaman, and like a good Provençal he favors the navy, which protects commerce. The eulogies which England had received from Montesquieu and Voltaire were bestowed by Mirabeau upon the Dutch republic because of its preeminent role in the development of the navy and of international trade and its practise of religious toleration and liberty of the press. He demands liberalism even in colonial policy. That commercial liberty for the colonies would lead eventually to complete independence he prophesies as inevitable and natural. "The new world will certainly shake off the yoke of the old," he foresees in 1756.

Following this original synthesis Mirabeau published *Théorie de l'impôt* (Paris 1760), a stout defense of the physiocratic single tax intermixed with sagacious observations on taxation in general, and *Lettres sur les corvées* (1760). Subsequently as a disciple of Quesnay and one of the most important propagators of the latter's school he wrote in collaboration with him *Philosophie rurale* (3 vols., Amsterdam 1764; abr. ed. as *Éléments de la . . .*, 1 vol., The Hague 1767–68), a popularization of physiocratic doctrines. After *Instruction populaire, ou la science, ou les droits et les devoirs de l'homme* (Lausanne 1774) he continued to produce writings of lesser importance, some of which were published posthumously. He died in the midst of the revolution, for which both he and his son—Honoré Gabriel, the most famous of all the Mirabeaus—had helped Quesnay and Rousseau to prepare the social and economic principles. If not a great writer he remains an original and impulsive spirit, who had a definite and profound influence upon his age.

PHILIPPE SAGNAC

Works: *L'ami des hommes, ou Traité de la population*, 8 vols. (Avignon 1756–60; 2nd ed., 3 vols., Paris 1758–60; new ed. by M. Rouxel, 1 vol., 1883). For a bibliography of his works, see *Mémoires de Mirabeau*, ed. by Lucas de Montigny, 10 vols. (Brussels 1834–36) vol. i, p. 226–29.

Consult: Loménie, Louis L. de and C. de, *Les Mirabeau*, 5 vols. (Paris 1879–91); Fling, Fred M., *Mirabeau and the French Revolution* (New York 1908), especially ch. vi; Ripert, H., *Le marquis de Mirabeau* (Paris 1901); Brocard, L., *Les doctrines économiques et sociales du marquis de Mirabeau dans L'ami des hommes* (Paris 1902); Oncken, A., *Der ältere Mirabeau und die ökonomische Gesellschaft in Bern*, Berner Beiträge zur Geschichte der Nationalökonomie, no. 1 (Berne 1886), and *Geschichte der Nationalökonomie*, Hand- und Lehrbuch der Staatswissenschaften, no. 2 (Leipsic 1902); Weulersse, G., *Le mouvement physiocratique en France de 1756 à 1770*, 2 vols. (Paris 1910); Lavergne, Léonce de, *Les économistes français du XVIIIe siècle* (Paris 1870) p. 112–67.

MIRANDA, FRANCISCO DE (1750–1816), Venezuelan revolutionary promoter. In 1783, after having served six years in the Spanish military service in the Old World and the New, Miranda fled in disgrace to the United States. He toured the country in 1783–84, discussed the American Revolution with Alexander Hamilton, Henry Knox and Samuel Adams and further stimulated a secret desire to liberate his native land from the rule of Spain. As a result of residence in France from 1792 to 1798, where he served as general in the army, he was profoundly impressed by the philosophy of the revolution. Miranda's economic ideas and his grounds for attacking the Spanish colonial system were leavened by the laissez faire principles of Turgot and Adam Smith. His reasoning about political rights was much influenced by Rousseau's *Contrat social*, while his views concerning the reversion of political rights to the people were based upon the philosophy of Locke. A democrat with aristocratic leanings, Miranda framed fantastic constitutions for an emancipated Spanish America, which showed the influence of Incan and Spanish institutions and yet were partly modeled after English law and custom.

His magnificent schemes remained on paper. From 1790 to 1808 he submitted plans for the revolutionizing of Spanish America to the governments of Great Britain, France and the United States; in 1806 he failed miserably, partly because of lack of aid, in a filibustering expedition led from New York City against Venezuela. He

played a leading part in bringing about the adoption of a declaration of independence by Venezuela in 1811; but when at a critical juncture his compatriots made him dictator he felt compelled, because a succession of calamities seemed to destroy the possibilities of victory, to surrender to the Spanish royalists in July, 1812. Nevertheless, his persistent pleas stimulated the interest of European cabinets in the commercial and political future of Spanish America, while his example long served as an inspiration to the revolutionists in the New World.

WILLIAM SPENCE ROBERTSON

Consult: *Fragments from an XVIIIth Century Diary: the Travels and Adventures of . . . Miranda*, compiled and tr. from Spanish ms. by J. H. Stabler (Caracas 1931); *Archivo del General Miranda*, vols. i–xii (Caracas 1929–31); Antepara, J. M., *South American Emancipation* (London 1810); Robertson, W. S., *The Life of Miranda*, 2 vols. (Chapel Hill, N. C. 1929); Parra-Pérez, C., *Miranda et la Révolution française* (Paris 1925).

MISCEGENATION is a term applied to intermarriage or illicit intercourse between members of different races. It is most likely to occur under colonial conditions where the new settlers are a group racially alien and composed entirely or almost entirely of men. In modern times miscegenation has generally been regarded with moral distaste by the white races, an attitude partly conditioned by the fact that the general relationship between the white and the darker races has been one of conqueror and conquered, of enslaver and enslaved or at best of master and servant. The great cultural differences between such races have also emphasized this so-called natural aversion. Imperial and commercial penetration into "backward" countries by European nations has sometimes led to the passage of prohibitory laws tending to maintain the superiority and authority of the small group of European settlers. The sentiment favoring these laws is generally stronger among the settlers than among the population of the home country. Such legislation or the use of the equally effective weapon of social ostracism of whites and the children of whites who contract miscegenetic marriages has been more widespread in Protestant colonies and countries than in those in which Catholic influence is strong, for Catholicism with its emphasis upon the essential equality of all before the church has tended to undermine racial prejudice. Moreover its desire to keep all social relationships within the control of the church has led it to condone and even to encourage such mixed marriages so as to diminish the illicit relationships which would otherwise flourish. The Catholic position has been to a large extent adopted by modern Protestant missionaries.

In the Spanish American colonies marriages between Spaniards and Indians were at first forbidden, but as early as 1514 the prohibition was lifted and intermarriage encouraged in the hope that legitimate unions would induce the immigrants to settle permanently in the New World and would win the favor of the natives. The ineffectuality of the decree of 1514 is evidenced by its repetition in 1515 and 1556; although concubinage was common between Spaniards and Indians, legitimate relationships remained rare. Marriage between Spaniards and the Negroes who were imported was neither favored nor widespread.

In the French American colonies miscegenetic marriages were recognized in the seventeenth and the early eighteenth century. The famous *Code noir* of 1685 punished concubinage between a white man and a Negro slave where there was issue by a fine of 2000 pounds of sugar but provided that if the man married the woman, she became free and the children legitimate; the fine was also avoided. Where the man was the master of the slave the punishment was more severe. This provision met with opposition from the colonials, and in 1724 Louis XV decreed that in Louisiana no marriages between blacks and whites were to take place under penalties to be fixed at the discretion of the courts. There was no prohibition of marriage with the Indians. Despite the doctrine of equal rights which pervaded French thought in the second half of the eighteenth century, the year 1778 witnessed a prohibition against intermarriage within France itself. With the revolution of 1789, however, these prohibitions disappeared and the principle of non-discrimination has since been maintained in French colonies.

Early in the twentieth century local regulations designed to prevent miscegenetic marriages were inaugurated in the German colonies. In the year 1905 in German Southwest Africa the governor forbade marriages of whites with blacks and finally with mulattoes. In East Africa in 1906 the governor ordered officials not to register such marriages without his consent. Later on such marriages were forbidden in Samoa. The children of non-recognized unions were to be classed as blacks. These regulations were given no publicity, and it was only in 1912

that the matter was discussed in the Reichstag, which refused to sanction laws against intermarriage and passed a resolution upholding its legality.

British policy has been against legislation prohibiting marriage between blacks and whites. Popular sentiment, however, has acted as a severe check upon such intermarriage in most British possessions and dominions, although it has had little effect upon concubinage. The mixed population in South Africa is very large, and partly because the legislature recognized that this was the result of the many illicit relationships rather than of the few legitimate unions and partly because of missionary pressure a law was enacted in 1927 making extramarital relations between whites and Negroes a punishable offense.

The only extensive prohibition of miscegenation is to be found in the United States, where there has been a continuous development of such laws from earliest colonial times, due originally to the institution of slavery. Implied in the property right enjoyed by the owner of slaves was the possessory right not only in the slave but in his descendants. Illicit intercourse, promiscuously indulged in between Negro slaves and indentured white servants or other white persons, led to bastard issue, whose ownership could not readily be determined. Where free white women bore children by a Negro slave, the right of the owner of the male parent to any interest in the children was contested. Where Negro women bore bastards or legitimate children of white men, the question arose as to whether such children could be held in slavery. To settle such questions and to protect the owners of slaves in their property right to the issue there was enacted such legislation as the Maryland law of 1664, which provided that the issue of marriages between free born Englishwomen and Negro slaves should belong to the master of the slave and that the woman also should become the slave of the latter during the lifetime of her husband. Like all prohibitory laws this was violated, sometimes at the instigation of the master of the slave; and in 1681 there was passed an amendment to this statute which modified the earlier penalties but emphasized in stronger language the inconveniences and controversies which might arise concerning the issue of such marriages. At a very early date Virginia had laws providing special penalties for illicit intercourse between blacks and whites. In 1691 it passed a law providing that a white woman having a bastard by a Negro or mulatto should pay a fine of £15 sterling or in default of payment be sold for five years; the bastard was to be bound by the church wardens until thirty years of age. It also punished marriage of a Negro, mulatto or Indian with a white person by the banishment of the latter. Massachusetts passed its law in 1705, punishing fornication on the part of a Negro with a white person and prohibiting marriage between such persons. Delaware in 1721, Pennsylvania in 1726 and North Carolina in 1741 similarly prohibited fornication or intermarriage.

Following the formation of the United States through the period ending with the Civil War Indiana in 1818, Maine in 1821, Tennessee in 1822, Illinois in 1829, Florida in 1832, Michigan in 1838, Washington territory in 1855 and Texas in 1858 passed laws forbidding illicit intercourse or marriage between the races. In the territory of Kansas such a law was passed in 1855 but was repealed by the state legislature in 1859. Massachusetts repealed the colonial statute, which had been retained, in 1843. New Mexico in 1866 and Washington in 1868 repealed its statute. Otherwise during the reconstruction period none of these laws against miscegenation were repealed; although they were for a time disregarded they remained upon the books. Statutes against miscegenation were repealed in Rhode Island in 1881, Maine in 1883, Michigan in 1883 and Ohio in 1887. Six states have held the matter to be of such importance that they have by constitutional enactment prohibited their legislatures from ever passing any law legalizing marriage between a white person and a Negro or a descendant of a Negro.

In 1932 thirty states forbade miscegenation; they were Alabama, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Idaho, Indiana, Kentucky, Louisiana, Maryland, Mississippi, Missouri, Montana, Nebraska, Nevada, North Carolina, North Dakota, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia and Wyoming. The statutes of these states vary and further confusion arises from the decisions interpreting them. The differences consist in the definition of races other than white, in the provisions against intermarriage between persons of races other than white but differing among themselves, in the penalties provided for such intermarriage and in the status of the parties to and the issue of such marriage. The definition of races other than white with whom

intermarriage is prohibited is particularly loose and unscientific. Although there is no known method for ascertaining the difference between the blood of white persons and persons other than white, frequent references are made in the statutes to persons having presumably definite types of colored blood. So in Virginia the proscription was against one having any trace whatsoever of any blood other than Caucasian, a person with one sixteenth or less of Indian blood being considered white. Georgia passed a law making felonious and void the intermarriage of a white person and a person with an ascertainable trace of African, West Indian, Asiatic Indian or Mongolian blood. The statute contained elaborate provision for the ascertainment of race prior to the issuance of the marriage license. Whether through later discovery of the scientific absurdity of the law or because of the great expense involved in setting up the necessary laboratories, the law is not enforced. It remains, however, as the extreme expression of racial discrimination, its language "ascertainable trace" going beyond that used in any other state, some of which prohibit marriages between white persons and persons of African descent (Oklahoma and Texas) or between white persons and persons of Negro blood (Alabama, Maryland, North Carolina and Tennessee) or between white persons and persons having one fourth or more of Negro blood (Oregon, West Virginia) or one eighth or more (Florida, Indiana, Mississippi and North Dakota). Other statutes employ more general terms.

Furthermore restrictions are not confined alone to intermarriages between white persons and Negroes. Thirteen of the states—Virginia, Georgia, Mississippi, Missouri, Nebraska, South Dakota, Montana, Idaho, Utah, Wyoming, Nevada, California and Arizona—have laws against intermarriage between white persons and members of the Mongolian race, and six—Virginia, North Carolina, South Carolina, Arizona, Nevada and Georgia—have laws against intermarriage with Indians and their descendants. In North Carolina, Louisiana and Oklahoma marriages are forbidden between Negroes and Indians. Oklahoma also forbids intermarriage between Negroes, Indians and Mongolians. In order completely to insure the purity of their peoples some of the legislatures have added prohibitions against intermarriage with persons of the Malayan and Korean races (*sic* in the law) and with mestizos, Kanakas and half breeds.

The greatest number of states having laws against intermarriage with Mongolians are in the west. There is, however, no correlation between the proportion of Negroes or other races to the total population and the presence of prohibitory laws. The proportion of Negroes, in 1930 for instance, varies from over 50 percent in Mississippi to less than 1 percent in eight of the states which have such laws (Idaho, Montana, Nevada, North Dakota, South Dakota, Wyoming, Utah and Oregon). The penalties provided for the violation of these laws vary from imprisonment for a few months to a term of ten years to fines ranging from small sums up to $2000. In some states both penalties may be concurrently inflicted.

Grave questions arise with regard to the validity of these marriages, particularly where questions of interstate comity and law are involved. When they are contracted within a state having prohibitory laws by persons domiciled there, the statutes uniformly declare them void. Confusion occurs, however, in the attempt to apply these laws to marriages contracted outside of the state of domicile. The general axiom is that a marriage valid where made is valid everywhere, with the possible exception of incestuous or polygamous marriages and marriages whose nature is such as to shock the court entrusted with enforcing the policy of the state. In some of the states prohibiting miscegenetic marriages the courts have taken the view that they are contrary to the declared public policy and that the necessity of determining their invalidity transcends the rules of comity between the states. Nine of the states have statutes declaring that where both parties are domiciled within the state and leave it in order to evade the state prohibitory law, returning thereafter, their marriage shall be void. When, however, the parties have established a new domicile in the state where a valid marriage is celebrated, some of the states having prohibitory laws will recognize its validity. Texas goes to the extreme of punishing by imprisonment for from two to five years the parties to a miscegenetic marriage, no matter where contracted, if they continue to live together as man and wife within its borders. With regard to miscegenetic marriages contracted outside of and by persons domiciled outside of a state having such prohibitory laws it is probable that such marriage would be held to be valid, although invalid according to the law of the forum.

It is impossible to formulate any general rule with regard to the legitimacy of the issue of these

marriages. Where the marriage is declared void, as is the case in almost all the states, the offspring are automatically bastardized by the declaration of nullity; no statutory provision or judicial decision is necessary. Nevertheless, in some of the jurisdictions the issue might share in the estate by will although not by inheritance and might with due formality be adopted and legitimized.

Attacks on the constitutionality of these statutes have frequently been made on the ground that they contravene the provisions of article 1, section 10, of the constitution and the provisions of the Fourteenth Amendment. There has been no decision sustaining such laws by the Supreme Court of the United States, but the state courts in nine states have upheld them, basing their holdings upon the right of the state to govern the marriage contract and upon the denial to the federal government of the power to limit the states in their exercise of exclusive jurisdiction over the validity of marriage and the status arising from it. The constitutionality of the statutes has been upheld also upon the ground that they involve no discrimination in that the prohibition is equally enforceable against both the white person and the person of the other race. In two cases where the question of constitutionality arose before federal circuit courts it was held that state statutes providing punishment for residents of the state contracting miscegenetic marriages outside the state as well as in the state were not unconstitutional under the contract clause (art. 1, sect. 10), on the ground that marriage is not a contract within the meaning of the section. In another case a circuit court held such a statute constitutional and not in contravention of the Fourteenth Amendment, on the ground that the right to marry is not a privilege of citizens of the United States as such but of the citizen considered as the citizen of a state, which alone can legislate with regard to marriage; and a statute against miscegenation was held not to abridge the privileges of citizens of the United States.

So long as these views prevail and while the states retain exclusive control of marriages within their borders or of marriages wherever contracted by their citizens, such variety of laws with regard to miscegenetic marriages is likely to continue. The reasons for such regulations are obscure. Certainly the original basis of the prohibition has been lost. The socio-economic purposes plainly stated in the laws of the colonies no longer exist, and therefore since the Civil War references in the statutes to property rights have totally disappeared. In recent years the legislatures and the courts have generally stated their purposes in terms of such social data as appeal to their particular bias or prejudice, such as the prevention of unholy alliances, contrary to the laws of God and nature, and the preservation of the so-called purity of the race. The increased proportion of mulattoes in states which have such laws would tend to indicate that the statutes have of themselves not deterred the amalgamation of the races. Legislation making concubinage and casual connection penal offenses has been particularly ineffective.

PHILIP WITTENBERG

See: MARRIAGE; INTERMARRIAGE; RACE MIXTURE; NATIVE POLICY; NEGRO PROBLEM; RACE CONFLICT; AMALGAMATION; CONCUBINAGE; ILLEGITIMACY.

Consult: Grentrup, T., *Die Rassenmischehen in den deutschen Kolonien*, Görres-Gesellschaft zur Pflege der Wissenschaft im Katholischen Deutschland, Sektion für Rechts- und Sozialwissenschaft, Veröffentlichungen, no. 25 (Paderborn 1914); Braun, G., *Zur Frage der Rechtsgültigkeit der Mischehen in den deutschen Schutzgebieten* (Greifswald 1912); Hubrich, E., "Die Mischehenfrage in den deutschen Kolonien" in *Zeitschrift für Politik*, vol. vi (1913) 498–506; Ravizza, A., "Matrimoni misti e meticci nella colonia Eritrea" in *Rivista d'Italia*, vol. xix (1916) pt. ii, 333–62; Olivier, Sidney, *The Anatomy of African Misery* (London 1927) p. 219–23; Woodson, C. G., "The Beginnings of the Miscegenation of the Whites and the Blacks" in *Journal of Negro History*, vol. iii (1918) 335–53; Stephenson, G. T., *Race Distinctions in American Law* (New York 1910) ch. vi; Reuter, E. B., *Race Mixture, Studies in Intermarriage and Miscegenation* (New York 1931), especially p. 73–103; Jenks, A. E., "The Legal Status of Negro-White Amalgamation in the United States" in *American Journal of Sociology*, vol. xxi (1915–16) 666–78; "Intermarriage with Negroes—a Survey of State Statutes" in *Yale Law Journal*, vol. xxxvi (1926–27) 858–66; *Negro Yearbook* (Tuskagee 1925) p. 241–43.

MISKAWAYHI, ABŪ 'ALI AḤMAD (d. *c.* 1030), Moslem philosopher and historian. He served the vizier al-Muhallabi in Bagdad, which was at that time ruled by a Persian sultan, then became librarian to ibn-al-'Amīd 1, vizier at Raiy; he subsequently entered the service of 'Aḍud al-Dawla, sultan in Bagdad, and appears to have continued in office under Buwayhid sultans.

His chief work on ethics, *Tahdhīb al-akhlāq* (Reformation of character, Cairo 1882; new ed. 1908), is based on the *Ethics* of Aristotle, with some ideas derived from Plato; the treatment is adapted to the doctrines of Islam and the despotic

conception of the state. While Miskawayhi agrees with Plato that the philosopher should be ruler and that the unification of the citizens should be his chief aim he makes the maintenance of religion an important function of the king or caliph, whom he regards as the substitute for Mohammed or for God.

His most important work, *Ṭajarib al-Umam* (History of Miskawayhi; facsimile reproduction from MS., Gibb Memorial series, vol. vii [1,5-6] Leyden and London 1909–17), is a universal history. For all periods up until nearly the end of the third Islamic century (beginning of the tenth century) it is merely an abridgment of Ṭabari's vast chronicle; but as the author approaches and enters his own time he bases it on the information given either by later writers or by state officials with whom he came in contact, especially his own chiefs, Muhallabi and ibn-al-'Amīd I. He expresses the greatest admiration for the latter's system of administration, of which little more is known than that it aimed at safeguarding the interests of the cultivators, whose produce constituted the chief source of revenue. Miskawayhi is also a strong advocate of religious toleration, to which he attributes the prosperity of the caliphate when 'Aḍud al-Dawla was "prince of princes."

Among Arabic historians he is almost unique in his power of reproducing scenes and portraying characters and appears to be absolutely free from either religious or sectarian bias. Although far better qualified for historical writing than Ṭabari, Miskawayhi never acquired his popularity, probably because the latter's work terminates shortly before the glory of the caliphate departed and a vast empire degenerated into a congeries of ephemeral and often mutually hostile states.

DAVID S. MARGOLIOUTH

Works: The portion of his history which covers the years 813–865 A.D. has been edited by M. J. de Goeje in his *Fragmenta historicorum arabicorum*, 2 vols. (Leyden 1869–71) vol. ii. The portion from 907–79 A.D. (the end) has been edited by H. F. Amedroz and translated by D. S. Margoliouth in *The Eclipse of the 'Abbasid Caliphate*, 7 vols. (Oxford 1920–21) vols. i–ii, iv–v, vii.

Consult: Margoliouth, D. S., *Lectures on Arabic Historians* (Calcutta 1930) p. 128–37; Caetani, L., "Preface" and Amedroz, H. F., "Notes on the Historian" in the Gibb Memorial edition of *Tajârib al-Umam or History of Ibn Miskawayh*, vol. vii[1], p. xi–xv and xvii–xxvii; Amedroz, H. F., "The Tajârib al-Umam of Abu 'Ali Miskawaih" in *Der Islam*, vol. v (1914) 335–57; Furlani, G., "L'etica di Ahmad ibn Muhammad ibn Maskavaih" in *Rivista di filosofia*, vol. x (1918) 32–47.

MISSELDEN, EDWARD (flourished 1608–54), English merchant and writer on economics. A prominent member of the Merchants Adventurers, Misselden served as their deputy governor at Delft from 1623 to 1633 and concurrently as a representative of the East India Company in its negotiations with the Dutch.

Misselden's first economic tract, *Free Trade or, the Meanes to Make Trade Flourish* (London 1622), was primarily a defense of the Merchants Adventurers. The organization of the King's Merchant Adventurers in 1614 had seriously threatened the Merchants Adventurers, and Misselden together with twenty-nine other members was compelled by distress to join the new company. But his cooperation seems doubtful since he was accused with "divers other false brethren" of exporting undressed cloth contrary to the company regulations. Although Cockayne's "Project" was a failure, the experiment had weakened the Merchants Adventurers. With the appointment of a standing committee on trade in 1622 Misselden apparently thought it necessary to write a defense of the old company. In his tract he attributed the alleged decay of trade to excessive consumption of foreign commodities, exportation of specie by the East India Company and defective searching in the cloth trade. He defended the corporate organization of foreign trade and implied that "seemly and orderly government" could be better provided by regulated than by joint stock companies. The India Company he particularly criticized for exporting bullion "out of Christendome," whence, he held, it never returned.

When Gerard de Malynes accused him of overlooking the "Mystery of exchange" as the chief cause of England's distress, Misselden replied in *The Circle of Commerce* (London 1623). In opposition to Malynes' par of exchange, an "old soil'd project," Misselden sets up a theory of exchange based on the "Ballance of Trade, an excellent and politique Invention." Although the metallic content of coins "directeth the price or value of the Exchanges, yet that price is greater or lesse according to the occasions of both parties contracting for the same." Completely reversing his earlier position concerning the India Company he now defends the exportation of specie on the reexportation theory, later elaborated by Thomas Mun, and develops the theory of the balance of trade. As contrasted with Malynes and Milles, Misselden's ideas may be called progressive; but he was not a profound thinker, and most of his

economic theory was developed in the interests of the Merchants Adventurers.

E. A. J. JOHNSON

Consult: Hewins, W. A. S., *English Trade and Finance* (London 1892) p. xx–xxx; Suviranta, B., *The Theory of the Balance of Trade* (Helsingfors 1923); Viner, J., "English Theories of Foreign Trade before Adam Smith" in *Journal of Political Economy*, vol. xxxviii (1930) 249–301, 404–57; Seligman, E. R. A., *Curiosities of Early Economic Literature* (San Francisco 1920) p. ix–xi; Friis, Astrid, *Alderman Cockayne's Project* (Copenhagen 1927).

MISSIONS. Individuals or organized groups engaged in religious proselytism as a vocation represent a phenomenon which has been confined largely, but by no means entirely, to Christianity, Buddhism and Islam. This fact may be traced to qualities inherent, although in differing degrees, in the religions themselves. The missionary impulse derives from the idea that a specific religion possesses universal validity and from the consciousness of a spiritual or moral obligation to transmit its precepts. Since missions are by definition agencies for peaceful propagation, aiming to convert by teaching and persuasion, they are feasible only when the content of a religion is sufficiently independent of a particular ethnical or national institutional complex so that its diffusion may be conceived as an end distinct from political expansion. Throughout history missions have been frequently concomitant with such expansion or facilitated by it, but their very existence implies that the propagation of religion is considered a separate process requiring special emissaries and techniques. Where this conception is lacking, the dissemination of a religion, irrespective of its claim to universality, tends to become contingent upon more or less adventitious environmental factors. The theocratic elements in Chinese Confucianism and the symbiosis of Hinduism with the political and social fabric of India did not prevent the spread of the former to Japan and Korea or of the latter to the regions now included in Indo-China and Java; they have, however, except in isolated instances, stifled whatever impulse might have developed to initiate deliberate proselyting activity. In certain places and periods, as, for example, during the centuries immediately preceding and following the opening of the Christian era, Judaism has attracted to itself many non-Jews; but only infrequently has it produced specifically missionary agencies. Manichaeism, a distinctly missionary faith including in its membership those who devoted themselves primarily to its propagation, has completely died out.

Even in the case of those religions which are most definitely proselyting, missionary activity has represented only one of several processes of expansion. Certain of the Moslem conquerors as well as the Christian Spaniards after their triumph over the Moors compelled a larger or smaller proportion of the subjugated population to become converted. More usually the vanquished have tended voluntarily to embrace the faith of their masters, for to it have attached social prestige and economic and political advantage; this motive appears to have operated powerfully, for example, in the acceptance of Islam by many subjects of Moslem conquerors. The same result may be produced by the peaceful conversion of a nation's natural leaders: in India King Asoka gave a very important impulse to the popularity of Buddhism; in Japan the adoption of Buddhism was favored by the example of the powerful Soga family and of Prince Shōtoku. Sometimes the prince or government has assisted more indirectly: many a Buddhist prince dispatched missionaries to other lands, and Christian missionaries, for instance, those who operated in the Spanish possessions in the Americas and the Philippines, have been supported by royal financial grants and military aid. Commercial contacts also may have as a concomitant the extension of a faith. Merchants become, incidentally, missionaries. Partly through them, to give only two of many possible illustrations, Islam gained a foothold along the Arab trade routes in the Malay Peninsula and the East Indies and Christianity made its initial contacts in some places in northern Europe. When two peoples at widely different stages of cultural development are brought closely together, those of the more nearly primitive level tend to adopt the religion of the more advanced civilization. Thus the Teutonic invaders of the Roman world were inclined to adopt the Christian faith, along with some other elements of the culture of the Roman provincials among whom they settled. So too in the centuries of its greatest prosperity in China, Buddhism made headway in Japan as an apparently integral part of the culture which the islanders were then avidly adopting and adapting from the brilliant and powerful empire on the adjoining continent. In the past hundred years Christianity has made marked gains among Africans and Asiatics, in part because it comes as a constituent of the civilization which is reshaping these peoples. A

desire for the advantages, spiritual or material, which a religion seems to offer has repeatedly proved an important factor in the acceptance of a faith. Thus the widespread longing in the Greco-Roman world in the early Christian centuries for deliverance from mortal flesh with its sins and ills and the assurance of immortality through union with a divine being was no small factor in the phenomenal expansion of Christianity and in the rapid growth of the mystery cults of Mithras, Isis and Osiris, Orpheus, Dionysus and Attis.

Neither in Buddhism nor in Islam has missionary activity ever become so systematic and so elaborately organized as in Christianity. Nevertheless, Buddhism owes an incalculable debt to the professional missionary. From the time of his conversion to his death the founder of Buddhism was himself an indefatigable propagator of his teachings. His example inspired his followers. Buddhist monks, being celibates and freed from family obligations, had liberty to travel, and their community life favored the establishment of groups from which influences radiated to the surrounding neighborhood. Missionary monks from India and central Asia had a major share in the introduction of Buddhism to China. For centuries Chinese monks sought inspiration in India in the scenes of the origin of their faith and, returning to their native land, brought fresh life to their coreligionists. Buddhist missionaries from China and Korea aided in the propagation of their faith in Japan. Japanese, journeying to monasteries on the continent, returned with reenforced zeal and in more than one instance introduced a new Buddhist sect into their homeland. The dissemination of Islam too can be traced in several countries to avowed missionaries—more than is sometimes realized. Mohammed himself was an ardent missionary and the Koran contains directions for the spread of the faith. While the great Arab conquests in Asia, Africa and Europe made soon after the prophet's death were not primarily for the purpose of effecting conversion, incidentally they were followed by vast accessions. Repeatedly earnest missionaries have labored for the conversion of non-Moslems. Thus in the eighth century a movement arose in Persia which evolved a specific technique of propaganda and had emissaries not only there but in other lands, including India.

During the last four centuries, which have witnessed the development of Christian missions to a degree of organization hitherto unprecedented, the aggressiveness of Buddhism and Islam has been far less marked. Although during the modern period and particularly since the opening of the nineteenth century it has won some new territories and peoples, notably along trade routes in the center and on the east coast of Africa, Islam has not covered anything like the same amount of territory as has Christianity. Not for considerably more than two centuries have Buddhists given strong indication of an intention to extend their faith among hitherto untouched peoples. The most that can be said is that Japanese Buddhism has manifested considerable determination to hold its oversea emigrants and that slight attempts have been made to organize a world mission of Buddhism.

In the process of expansion which has made Christianity both numerically and territorially the most widely diffused religion on the globe, professional missionaries devoting the major portion of their time to the task have on the whole played a part of fundamental importance. This part was, however, comparatively modest in the first period of Christian expansion, covering roughly the first four centuries of the Christian era, during which Christianity rose from an apparently insignificant Jewish sect to a community virtually coterminous with the Roman Empire and embracing in addition the majority of inhabitants in the buffer state of Armenia as well as a considerable part of the population in Abyssinia, and scattered groups in Persia, Arabia, central Asia and possibly India. To the annals of professional missionaries belong such notable names of the first century as Peter and Paul; in the third century Gregory the Thaumaturgist was largely responsible for the conversion of Pontus; and in the third and fourth centuries Gregory the Illuminator was active in helping to complete the conversion of Armenia. But probably most of the ground was gained by laymen and laywomen primarily engaged in other occupations. The success of this mode of propagation must be laid in part to external circumstances, particularly the religious hunger of the masses and the degree of cultural and linguistic uniformity and of social and commercial intercourse prevailing in the Roman world. That Christianity eventually outstripped the competing religions and cults which mushroomed under these conditions was due to a combination of factors peculiar to the Christian faith and church (*see* RELIGIOUS INSTITUTIONS, CHRISTIAN, section 1), and to its final adoption by the Roman emperors.

In the second period of the spread of Christianity, from about the year 400 to the close of the fifteenth century, the professional missionary played a much more significant role than he apparently did in most of the first period. In winning to the Christian faith the barbarian invaders of the Roman Empire and the peoples of northern and central Europe—a process which was continuous during the period and was never fully accomplished—he had a major share. The vast majority of the missionaries were monks. Complete devotion to the religious life, celibacy with its freedom from family obligations, the vow of personal poverty and the typical organization of monasticism into communities to the heads of which each member had promised obedience contributed toward rendering monks not only effective advance representatives of the faith but agents as well for the slow and patient process of instructing newly won populations in Christian tenets and practises. Often their task involved clearing forests, cultivating land, conducting schools in secular as well as religious subjects and producing and copying literature. Monasteries were centers of civilization in rude and semibarbarous areas.

Even a simple catalogue of notable missionaries would prolong this article unduly. Special mention should be made, however, of Ulfilas (fourth century), who put the Scriptures into the Gothic language and won many of his fellow Goths. Patrick (*c.* 389–461), a Briton of Romanized and Christian stock, as a youth was carried captive to Ireland, escaped after some years and returned still later as a missionary. Christianity had arrived in Ireland before him, but he strengthened and extended it. After his death Irish monasteries became centers of missionary enthusiasm, and remained such until the ninth century, when they were devastated by invasions of the Northmen. Even then many of their members, forced to flee, aided learning and religion on the continent. Irish monks were missionaries in Scotland, which was visited particularly by members of the island monastery of Iona, founded by Columba in the sixth century; in England; in the Rhine valley; among the Franks; in Gaul; in what is now Switzerland; and in Italy. Familiar with Latin and in some cases even with Greek, they not only propagated the faith in pagan regions but endeavored to lift the level of education and morals among nominal Christians. In 597 the Roman Augustine, who with a company of fellow monks had been dispatched by Pope Gregory the Great, reached England and not only helped to spread Christianity among the Germanic inhabitants but to tie up the Christian communities with the papacy. Willibrord (*c.* 657–738), a product of an Irish monastery, led the missionary work in Frisia, as did Boniface (Wynfrith) (680–755) in the Rhine valley; they were only two of the many English monks and nuns who taught their faith among the Germanic peoples on the continent. The monk Ansgar, born about 801 in the diocese of Amiens, was the principal early missionary to Denmark and Sweden. Two monks of the ninth century, Cyril and Methodius, were the chief missionaries in Moravia. In the eleventh century Benedictine monks, at the invitation of the king, Stephen, had a large share in the conversion of Hungary. Much of the propagation of the faith in Russia was likewise due to monks.

The work of the monks was aided or supplemented not only by lay pioneers, such as merchants, but by the papacy and the secular rulers. The papacy occasionally took the initiative and often gave supervision and direction. As a center of reference and authority Rome was to no small degree responsible for the processes and the results. Often, as in the case of Clovis among the Franks, Vladimir at Kiev, Stephen of Hungary and some of the Norwegian kings, the acceptance of Christianity by the monarch was in advance of that of the majority of his subjects and was followed by the mass conversion of his followers—either voluntary or induced by force. Frequently a ruler afforded financial and even armed support to missionaries, at least partly from the desire to extend his political power; thus in several regions Carolingian backing entered into the process of conversion.

The methods of conversion were in some cases persuasion, example and instruction and in others force. Many missionaries and leading churchmen raised their voices against the use of compulsion, and more than once the papacy opposed it. In a rough age in which rulers were generally soldiers the protests as a rule proved vain. In some regions, however, notably among the English and in Ireland, very little force was employed; and always it was preceded, accompanied or followed by the more peaceful labors of the monks and clergy. The usual course in the conversion of a people was first the acceptance of the faith by a few scattered individuals or small groups, then the baptism of the monarch or chiefs, followed by the rapid and superficial conversion of the majority of the people

and the slow and often very incomplete work of instruction.

Between the seventh and the sixteenth century Christianity suffered serious territorial reverses through the spread of Islam in the Near East, Mesopotamia, north Africa, the Iberian Peninsula, and southeastern Europe and through the Mongol irruption in the thirteenth century. Some of the territory lost to Islam it regained during the same period, chiefly through the crusades. While the religious motive formed only one of the impulses which gave rise to and maintained the crusades, and did not always or even often predominate, yet it was prominent, and the crusades helped in the establishment of Roman Catholic communities in the Near East. Moreover they opened the way for and were often accompanied by zealous missionary monks, and, in their later stages, by ardently missionary Franciscan and Dominican friars. Some of the friars made their way far beyond the outposts of the crusaders into central Asia and in the thirteenth and fourteenth centuries even into India and China. Here, however, the results proved scanty and ephemeral. In the Iberian Peninsula what was practically a long intermittent crusade slowly annihilated the Moslem political power and was accompanied by the reconversion of the area to Christianity. In the sixth century Christianity spread southward, at first chiefly through the agency of missionaries from the Roman Empire to Nubia. For eight or nine centuries the Nestorian and to a lesser extent the Jacobite churches conducted extensive missionary operations in Asia. As a result of that effort, in Persia, central Asia, India and China Christian communities arose, some of them of considerable size, and endured for centuries. However, the latter part of the fourteenth and the fifteenth century witnessed their rapid decline and the complete disappearance of all but a few remnants in Mesopotamia, Persia and south India.

The third period of expansion, running from the close of the fifteenth century to the beginning of the nineteenth, is associated with the discoveries and conquests by European peoples, predominantly Roman Catholic, and the commerce conducted by them. In most of the exploration and conquest, particularly of the Portuguese and Spaniards, the conversion of non-Christians was put forward as a leading objective. A great proportion of the expeditions included members of the clergy, who went partly to minister to the Europeans but also as missionaries to the natives. Many projects, exclusively missionary in purpose and personnel, were undertaken. The great majority of the missionaries belonged to the religious orders, notably the Dominicans, Franciscans, Augustinians and the recently organized Society of Jesus. Francis Xavier (1506–52), a member of the original group which constituted the Jesuit order, pioneered in India and the Far East and was one of the most noteworthy missionaries in the history of the church. The Société des Missions Étrangères of Paris, an association of secular clergy founded in the seventeenth century, was prominent in French missions in India, Siam, Indo-China and China.

The Holy See claimed the right not only to direct the work of conversion among non-Christians, but to assign to Christian princes both the responsibility for conducting missions and the temporal authority over pagans. Accordingly ecclesiastical and temporal jurisdiction over the newly discovered lands was divided between Spain and Portugal. The Spanish and Portuguese monarchs financed, directed and supervised missions and missionaries. They controlled the ecclesiastical establishments within their respective colonial territories and, to a certain extent, outside the lands immediately under their political direction. Conflicts over this right of patronage in territories not under the political administration of Spain or Portugal arose with non-Spanish and non-Portuguese missionaries who declined to submit to it and also with the Congregatio de Propaganda Fide, organized by the papacy in 1622 to direct the work of evangelization in non-Catholic and pagan countries. The conflict waxed more acute when, with its decline, Portugal proved less able to staff adequately the missions in the vast areas over which it claimed ecclesiastical jurisdiction through the *Padroãdo*. French missionaries especially were inclined to ignore Portuguese claims, particularly as in time they became active not only in French colonial possessions but in such independent countries as China.

In this period Roman Catholic missions covered an enormous territory. They were coextensive with Spanish and Portuguese settlements in the New World, with the Portuguese and French possessions in India and the East and with the regions actually occupied by the Spaniards in the Philippines. They were to be found in China, for several decades in Japan, in large portions of India outside Portuguese or French jurisdiction, in Tibet, in the Near East, in

several places along the coast of Africa, for a time in Abyssinia and over much of the portion of North America within the French sphere of influence. Moreover Roman Catholic missionaries, especially the Jesuits, were trying to win Protestants back to Rome and so were often numerous in Protestant lands.

In the Spanish Americas, after the first wave of exploration and conquest had spent itself, missionaries formed the advance agents of Spanish civilization and political authority. Particularly in the territory which is now Texas, New Mexico, Arizona and California, priests supported by small military contingents sought to induce the Indians to settle around the mission station and to teach them not only the rudiments of Christianity but agriculture and simple industries. In French America missionaries were among the most distinguished explorers, pioneers of white supremacy, but were not on the whole so immediately successful in the work of conversion as were the Spaniards—a difference due not to lack of zeal but to the character of the Indians among whom they labored. The missionaries, particularly those in Spanish America, the West Indies and the Philippines, proved the most active advocates of the natives against the rapacity and cruelty of the conquerors, although some of the clergy sided with the colonists. It was missionaries who in the Americas boldly denounced the conquistadores for their barbarities and who insistently presented the cause of the aborigines to the authorities in Spain. Bartolomé de las Casas (1474–1566) was probably the most prominent of such missionaries, but he was only one of many. To them were largely due the humane regulations of the Spanish crown—all too frequently disregarded under the stress of conquest and the pressure for laborers for mines and fields—which sought to protect, convert and educate the natives. In Paraguay for about a hundred and fifty years in the seventeenth and eighteenth centuries the Jesuits exercised a benevolent paternalistic control over the Indians, most of the time without interference from the Spanish or Portuguese civil or military authorities. Missionaries introduced new plants and fruits, established schools, compiled grammars and dictionaries of native tongues, wrote works on the cultures and customs of many of the peoples among whom they served and translated western books into American and Asiatic languages and some of the classics of non-European peoples into European tongues.

The results of these extensive labors were noteworthy. Not only did missionaries assist in the process of European penetration and conquest and prove the most prominent agents in tempering the harshness of that impact, but they won large populations to the Christian faith. Within the territories over which Spanish and Portuguese political control was effective, mass conversions were the rule and the bulk of the native population in time professed the faith of their masters. In regions to which that control did not extend or where it was not well established converts were more scattered. For instance, in India outside the boundaries of the limited Portuguese posts converts seldom formed more than an infinitesimal proportion of the population; and in China, in spite of the favor which missionaries won at court by their service as scholars, Christians never numbered as much as 1 percent of the population and were periodically persecuted because they seemed to threaten the existing social and political order. For a time in the sixteenth century Christianity made rapid headway in Japan, partly because some of the local lords hoped by supporting it to win a share in the lucrative Portuguese and Spanish commerce. Later it was all but completely stamped out because it was believed subversive to the political unity and independence of the realm.

Not much adaptation of this imported Roman Catholic Christianity was consciously made to the customs of the preceding cultures, although some modifications inevitably crept in, as evidenced by the survival of many animistic beliefs and a tendency on the part of the natives to identify their old gods with the Virgin and the saints. In India and China outside the area of possible European political conquest, where the one hope of winning the majority to the faith seemed to lie in antagonizing the native cultures as little as possible, some of the Jesuits made interesting attempts to tolerate in the Christian community indigenous institutions and practises, such as caste and the cult of ancestors. After prolonged controversy, however, these experiments were in large part condemned by Rome. In the Americas, so far as possible, a clean sweep was made of the pagan cults. Latin remained the liturgical language. Some efforts were put forth to train a native clergy, but bishoprics and archbishoprics were limited almost exclusively to those of European blood. In the religious orders, which continued more powerful than the secular clergy, those of European stock predominated. European imperialism

was as persistent in the church as in the state.

When during the closing decades of the eighteenth century the religious indifference and anticlericalism of the Enlightenment, aggravating the setback to Catholic expansion involved in the decay of Spain and Portugal, brought about the decline or virtual suspension of missionary activity until after the disruptive effects of the French Revolution and the Napoleonic wars, the predominance of the Roman church in the missionary field had as yet received little challenge from either Protestants or Greek Catholics. A fundamental reason for this was that Roman Catholic peoples were the most active explorers and colonizers of the period prior to 1800 and were more extensively in touch with non-Christians than were either Protestants or the Eastern churches. But there were supplementary reasons. With the exception of the church of Russia, the Eastern churches were on the defensive against Islam; the Russians, exempt from this menace, had in fact disseminated the Christian faith as they moved across Siberia and into Alaska, while the state church had devoted some attention to the conversion of the non-Christian Tartars within the Russian Empire. The Protestants had been too preoccupied with controversies with the old church and with each other, with the formulation of their beliefs and with the problem of effecting an organization to give much time or thought to non-Christian peoples. Many of the outstanding leaders of early Protestantism, absorbed in furthering their form of the faith within Europe, were indifferent to foreign missions. With the entry of such Protestant powers as the Netherlands, England, Sweden and Denmark into the field of colonization in the seventeenth century certain religious leaders urged the states to provide for the Christian education of natives within their colonies. The pressure was sufficient to induce the Dutch to maintain official missions in the East Indies and Ceylon and, during their brief occupation, in Formosa. But in general the Protestant governments manifested little tendency to assume the responsibility. Such missions as were carried on in English territories operated almost entirely without governmental assistance; the agent of British power in India and the Far East, the English East India Company, long refused either to tolerate missionaries within its territories or to give them passage on its ships, on the ground that missionaries would jeopardize harmonious relations between the company and the natives. The only ardent or permanent missionary zeal displayed by the English prior to the changes which prepared the fourth and final phase of Christian expansion made its appearance in the English colonies of North America, where several religious bodies conducted missions among the Indians.

On the Protestant side the impulse for the great missionary movement of the nineteenth and twentieth centuries, during which the Christian faith attained its widest geographical extension, may be traced to the "evangelical awakening" of the eighteenth century in Great Britain and to the continued quickening of religious life in Protestant circles in North America, Great Britain and the continent of Europe. In its inception the new religious life in Great Britain owed much to German Pietism, the product of a revival of the late seventeenth and the early eighteenth century. An evangelical sect projected into the alien climate of the Enlightenment, the Pietists had found an outlet for their proselyting zeal during the eighteenth century in foreign missions. Among these were a Danish project in Greenland; a mission in south India under Danish auspices but manned chiefly by Germans from the Pietist center, the University of Halle; and the many, widely scattered missions of the Moravian Brethren begun under the direction of the Pietist Count Zinzendorf in such regions as south Africa, the Danish West Indies, Surinam, Greenland and Labrador and among the Indians in the English colonies in North America. It was, however, the British and the Americans who initiated the period of the efflorescence of Protestant missions and who have continued to supply an overwhelming preponderance of their personnel and support. Not only was the "evangelical awakening" immediately responsible for the rise of missions in these countries, but a great part of the missionary movement on the continent was due directly or indirectly to repercussions from the quickening in the Anglo-Saxon churches.

The first major foreign missionary organization resulting from the new religious movements was the Baptist Missionary Society, founded in England in 1792, whose chief creator and first missionary was William Carey. This was soon followed in Great Britain by the London Missionary Society (1795), the Church Missionary Society (1799), the British and Foreign Bible Society (1804); in the United States by the American Board of Commissioners for Foreign Missions (1810); and, eventually, by many scores of societies in Great Britain, North America and

Europe. In America home mission societies followed the whites as the frontier moved westward, and cared for the Indian and the Negro. Beginning with 1886 the Student Volunteer Movement for Foreign Missions, which originated in the United States although it was paralleled in some other lands, did much to recruit for the missionary staffs. Normally, in the United States and Canada and in many instances in Great Britain, each Protestant denomination has its missionary society or societies to which it gives official support. On the continent, however, the sanction of an entire communion has less frequently been given a single society, and it is usual to have several different associations within a particular communion. A few bodies, notably the China Inland Mission (1865), draw their funds and their personnel from several denominations and even from more than one country. Each of the leading societies has developed machinery for educating its constituency in the giving of life and money. Careful tests have been devised for selecting missionaries, so that the average caliber of the personnel is often quite high.

Down through the nineteenth century and even until after the World War of 1914–18 the Protestant missionary movement expanded continuously in financial resources, in personnel and in the size of the constituencies resulting from it in the lands in which it labored. Its organization by denominations led to the perpetuation of sectarian divisions on the new geographic frontiers of Protestant Christianity. It developed, however, especially in the twentieth century, machinery for interdenominational consultation and action. Chiefly since 1910 there have come into existence, in lands to or from which missionaries are sent, thirty-seven national and regional bodies, in which the majority of the denominational organizations cooperate. Twenty-six of these national and regional bodies in turn are represented on the International Missionary Council, an outgrowth of processes set in motion at the World Missionary Conference held at Edinburgh in 1910.

In the Roman church the missionary revival which paralleled the Protestant movement resulted from the strengthening of Catholicism accompanying the Restoration and the age of Metternich. Many new missionary orders and congregations have come into existence, among them the White Fathers (1868), the Society of the Divine Word (1875) and the Congregation of the Immaculate Heart of Mary (1863); international associations, notably the Society for the Propagation of the Faith (1822), were created for the collection of money for missions. During the nineteenth century the Catholic missionary movement was predominantly French in personnel and support. In many regions the French government exercised a protectorate over Catholic missions and in some places, particularly in the Near East, China, Indo-China and the South Seas, found in them a screen for imperialistic political aggression. Yet no such extensive financial support was given them by governments nor was any such thoroughgoing control exercised by the French state over ecclesiastical machinery as was the case in the Spanish and Portuguese missions of the preceding period. With the anticlerical legislation and the separation of church and state in France at the close of the nineteenth and in the early part of the twentieth century, and with a quickening of missionary interest in other lands, French predominance declined.

The Russian Orthodox church confined its activities almost entirely to the Russian possessions, although it did institute a strong mission in Japan; after the revolution of 1917 it attempted to follow the émigrés. Several of the Eastern churches moreover sought with some success to extend their activities to America to cover the emigrants from their constituencies. It must be remembered, however, that through the antireligious policy of the Communist party in Soviet Russia Christianity has suffered its most marked territorial reverse since the rise of Islam.

In the nineteenth and twentieth centuries as in the earlier centuries of the modern era Christian missions have been intimately associated with the new economic movements in the Occident and with the expansion of European peoples. It is from lands and sections which have gained most in wealth and population from the new industrial processes that the major portion of the support for missionary societies in men and money has been derived; it is in regions penetrated by the expanding European peoples that missions have been chiefly conducted. Sometimes, as in David Livingstone's travels in Africa, missionaries have been the first to blaze the way for the European invasion. More frequently they have followed the first explorers. In practically every non-European land, however, missions have constituted an important part of the impact of European peoples and have modified the resulting cultural revolution.

The type of Christianity prevailing in any region has tended to reflect that of the western nation which is there dominant. Thus as a rule in Africa Protestant missions are strongest in the British possessions, while the Roman Catholic are dominant in French, Belgian and Portuguese territories. Practically no Protestantism is to be found in French Indo-China. In the Dutch East Indies Protestantism is more fully represented than Roman Catholicism, although the latter has tended, with the increasing strength of Catholicism in the Netherlands, to have a growing place. In British India Protestantism is more powerful than Catholicism. American Protestant missions, although prominent in India, the Near East and parts of Africa and dominant in Burma —regions where American political control is non-existent and American commercial interests are comparatively negligible—are especially active in China, Korea and Japan, in which American commercial interests have traditionally been strong; in the Philippines since the American occupation; among the Indians of the United States; and in Latin America. The World War tended to drive German missions out of British territory and out of German colonies as these passed into allied hands. During recent years, however, German missions have been restored to many of their old fields.

Although closely connected in a broad way with the process of European penetration, the missionary movement has been more dissociated from governments during the nineteenth and twentieth centuries than at any time since the conversion of Constantine. On the whole this has been even more generally true of Protestant missions than of Roman Catholic. Often, however, some connection has existed, and not infrequently governments and missions have reenforced each other. In China toleration of Christian missionaries and their converts was written into the treaties of 1858 with the major western powers. Mission schools have often been granted financial assistance by western and colonial governments—although this has not been on the ground that they are Christian and are making converts, but because they are schools. Many influential colonial officials have as individuals given support to missions. Sometimes, as in Uganda, the missionary forces have been active in obtaining the extension of the political authority of their government over the region in which they are at work. Not infrequently, however, European and American governments or their representatives have been lukewarm and even hostile to missionaries. In very few regions have they provided financial backing for directly proselyting activities. They have not regarded the task of conversion as an integral part of their obligation to subject peoples, as did the Spanish and Portuguese governments in the preceding period. Deriving its extensive funds chiefly from the gifts of private individuals and exempt from the control that accompanies governmental assistance, the missionary movement has probably become more nearly a purely religious undertaking than heretofore.

Nevertheless, the attitude of the natives toward Christian missions has been profoundly conditioned by the close connection of the latter with the expansion of European peoples and cultures. In many instances converts have been moved to accept the faith by the hope of the assistance of the powerful white man or by the belief that Christianity is indissociable from that western civilization which they are eager to adopt and that it will bring them the political power and wealth which they envy in the Occident. Conversely, opposition to missions has often been actuated by a fear that they are agents of western imperialism. Thus the violent persecutions of Christianity in Korea and Indo-China in the first half of the nineteenth century seem to have sprung largely from this source. In more recent years, with the rise of nationalism in the East, leaders of anti-Christian and antimissionary movements, for instance in China and Turkey, have given as reasons for their attitudes not only the association of Christian missionaries with western imperialism but the denationalization of converts and the destruction of national cultures by western Christianity. Some opponents of missionaries, it must be added, are motivated also by the religious skepticism which often results from contact with the Occident and oppose not only Christianity but all religion on the ground that it is superstitious and unscientific.

The methods employed by missions in the nineteenth and twentieth centuries have in some respects resembled those of preceding periods, particularly in the case of Roman Catholic missions. The latter still make it their primary objective to gather as many individuals as possible into the church, there to insure, through instruction and the ministrations of the clergy, their regeneration in this life and their salvation in the world to come. The conversion of an entire village is preferred to that of isolated

individuals, and the effort is often made to win the chiefs of a primitive tribe and through them the masses. Many Protestants moreover have believed it wise strategy to seek adherents from the dominant classes or to train leaders, and have sought to do so largely through schools. Mass conversion to Protestantism has occurred, although usually it has been confined to primitive peoples, such as those in the Pacific islands, and to outcaste groups in India. Mixed motives have often operated, as in earlier centuries, to produce conversions both to Protestant and to Roman Catholic Christianity. So among the outcastes of India the desire to improve their social and economic status has been an important factor; in China the protection given to Christians under the treaties has motivated some conversions, and probably in all lands the economic assistance afforded by missionaries has been a powerful attraction.

Yet in many ways the methods and objectives of Christian missions in the nineteenth and twentieth centuries have differed markedly from those of previous ages. This shift has accompanied the increased independence of missions from secular control and is related particularly to certain emphases and values closely associated with Protestantism. The traditional stress of Protestantism upon individual conversion has been accentuated in Protestant missions because most of the support for missions has tended to come from those groups which have magnified conversion as an experience involving the emotions, the intellect and the will and accompanied and followed by moral changes. Narrowly linked with this is the humanitarianism which among the Anglo-Saxon peoples has been so closely intertwined with, and so largely the product of, the religious awakening of the eighteenth and nineteenth centuries. As a consequence Protestant missionaries not only have sought the spiritual and moral transformation of the individual by religious processes and have endeavored to build up Christian communities which would be characterized by what they considered a Christian type of life, but they have labored to relieve suffering, to remove ignorance and to attack whatever seemed to them to be socially unjust and evil. As they have watched the native cultures change and in many cases disintegrate under the impact of western civilization, they have striven to build Christian ideals and practises into the civilizations in the hope of replacing the loss. The relative emphasis upon the "individual" and the "social" aspects of the missionary program has varied from group to group; but while extremists on either wing have, with resulting tension, tended to denounce the others, all groups have in practise given attention to both aspects. The Protestant belief in the Bible as the authoritative basis of faith and practise and the insistence that each Christian read it for himself have brought about the reduction of many scores of languages to writing, the translation of part or all of the Bible into hundreds of tongues and the organization and maintenance of thousands of elementary schools for the non-Christian as well as the Christian constituency. Education, much of it in secular subjects and in some countries stressing secondary and higher institutions, has become one of the major features—in several regions the major feature—of missionary activity. The humanitarian motive has led also to extensive medical work. In China the modern medical profession is almost entirely the creation of the Protestant missionary and in India and Africa he has held an important place in medical relief. Schools for the blind, leper asylums, famine relief, public health education, western forms of athletics, agricultural improvement, action against slavery, the abolition of the opium traffic, the improvement of relations between races and nations, greater freedom and education for women and girls, have all been among the projects of Protestant missionaries. Similar tendencies have become manifest also in Roman Catholic missions. More than formerly the latter have emphasized the orphanage, where destitute children can be both cared for and reared in the Christian faith. Much effort and money have been devoted by Roman Catholics to the maintenance of schools and hospitals, printing presses and newspapers, although these labors are still considerably less extensive than among the Protestants.

In results as in methods the missions of the nineteenth and twentieth centuries are somewhat in contrast with those of preceding epochs. During this period no large nation has moved into the Christian church. Here and there the majority or considerable sections of a tribe or of the population of an island have been won to the Christian faith. In India, where the Protestant membership is predominantly of outcaste origin, a large proportion of a depressed group has often professed conversion at about the same time. But in none of the major areas in which missions are conducted, with the exception of the South Seas, do Christians form even a substantial minority of the population. In Japan and

China they constitute less than 1 percent, in India only slightly over 1 percent, and in Negro Africa probably about 2 percent of the whole. The apparent meagerness of statistical results has been due to a variety of factors, among them the resistance to a new faith by highly organized cultures, as in India, China and Japan, and the emphasis of nineteenth century missionaries upon individual rather than mass conversion and upon a relatively high degree of religious instruction for Christians. In each of these areas, however, the increase of the Christian groups has been and continues to be proportionately more rapid than the rate of growth of the total population. Emphasis is more and more being placed, especially with the recent rise of nationalism in non-occidental lands, upon the training of native leadership, independence of foreign financial assistance and, in Protestant groups, upon freedom from alien ecclesiastical control. The process of "indigenization" is slower in liturgy, ecclesiastical architecture and forms of church government. In some Protestant circles a growing tolerance toward non-Christian faiths is apparent. There have been many advocates of the idea that missionaries should not merely teach but learn from other faiths. Here and there indeed, as in some near eastern Christian colleges, proselyting is deliberately eschewed and the attempt is made rather to strengthen existing religious groups by permeating them with a certain amount of Christian idealism. Particular attention has recently been focused upon some of these issues by the publicity accorded to *Re-thinking Missions* (New York 1932), a volume issued by the Protestant Laymen's Foreign Missions Inquiry.

Home missions have operated with particular success in North America. Following the white population on its westward migration in the United States and Canada or in its settlement in the eastern cities, missionaries have held to the faith of their forefathers most of the professedly Christian emigrants to the United States, Canada and South America. Moreover about half the Negroes of the United States are members of Protestant churches, most of the growth being the result of missions by whites and by Negroes since their emancipation.

The influence of missions, and especially of Protestant missions, has by no means been confined to the creation of Christian groups. Often it has profoundly affected an entire tribe or nation. Missions have shared in the corrosive effect of European civilization upon non-European cultures, sometimes, as in the case of the Taiping rebellion in China in the middle of the nineteenth century, with spectacular results. In many instances, however, especially in late years, missionaries have sought to conserve what they have deemed the better elements of the old. All along they have attempted to guard non-European peoples against ruthless exploitation by westerners. It is significant that the Chinese of the twentieth century who has had the most profound influence over his fellow countrymen, Sun Yat-sen, received most of his formal education at the hands of Protestant missionaries and that the two most influential Indians, Gandhi and Rabindranath Tagore, while not professing Christians, are both in part the products of Christianity. New sects showing Christian influence have arisen, at least one of them, the Ārya Samāj, by way of reaction and with a strong anti-Christian bias. Hinduism has been modified by its contacts with Christianity, and Japanese Buddhism has borrowed many of its methods and some of its concepts from Christianity. Through mission schools as well as through other channels Christianity is influencing many of the customs and ethical standards of non-European non-Christian peoples. It is assisting and in places initiating the emergence of women into a new status.

The example of Christian missions has in sporadic instances stimulated a counteroffensive on the part of oriental religions. On occasion missions have been sent to America and western Europe by Moslems, Buddhists, Hindus and Theosophists, but in general they have met with only limited success. In the realm of religion the Occident shows the influence of its contact with the Orient chiefly in its growing tolerance for non-Christian faiths and in its modification of the claim that Christianity may rightly be regarded as the only true religion. Even in church circles, particularly in American Protestantism, Christianity is frequently conceived as merely one of the paths to religious reality.

In certain spheres and periods Christian missions have exerted considerable effect upon the culture of the peoples from whom they have sprung. Missionaries have made notable contributions to European and American knowledge of the geography, history, language, literature, customs and religion of the peoples to whom they have gone. The Jesuit missionaries of the early modern period amassed in *Lettres édifiantes* and other compilations stores of information which have been of great importance for scien-

tific research in anthropology and ethnology. Some outstanding anthropologists, for example, R. H. Codrington, have been Protestant missionaries. Often missionaries have portrayed in so favorable a light the peoples to whom they have ministered that they have awakened admiration of or sympathy for them. Thus the enthusiasm for China in Europe in the eighteenth century was based upon information provided by Roman Catholic missionaries; the *bon sauvage* as apotheosized by Rousseau was, no less than the *sage chinois*, a concept abstracted from the writings of foreign travelers, particularly of Jesuit missionaries. The friendliness of the United States toward China during much of the nineteenth and twentieth centuries has probably been due in part to missionaries.

At present Christian missions manifest changing trends. Roman Catholic missionaries have been increasing, thanks partly to the active support of recent popes, especially Pius XI, and partly to a missionary awakening among American Catholics. Official figures for 1927 give the total number of Roman Catholic foreign missionaries as about 25,000, of whom about 8000 are priests and about 14,000 sisters. Affiliated with the Congregatio de Propaganda Fide there were at that time 5 universities with 1107 students and 31,413 other schools educating 1,520,603 pupils. Hospitals numbered 692, dispensaries 1857, orphanages 1528, leper asylums 81 and homes for the aged 299. Within the past two decades Protestant missions have been dealt some heavy blows. The incomes of British societies have shown no very great increase since the World War; the German societies have not fully recovered from the reverses suffered during the war and its aftermath; and the incomes of American societies, after an initial phenomenal growth in the years immediately succeeding the war, began to decline about 1925, for reasons not yet entirely clear. Between 1928 and 1930 the total expenditures of the societies connected with the International Missionary Council, in which a number of boards are not included, averaged $51,273,695 a year; of this amount approximately three fifths came from North America and slightly more than one fifth from Great Britain. The most recent reliable figures for the entire enterprise, representing conditions at the end of 1922 and early in 1923, show a total Protestant foreign missionary staff of 29,188, of whom 7625 were ordained men, 3819 unordained men, 8619 wives and 9125 unmarried women and widows. Since that date the number has probably declined somewhat. There were, according to the same statistical source, 101 colleges and universities with 22,827 students; in addition there were 49,426 other schools, in which 2,403,959 pupils were enrolled. Protestant missions were supporting 858 hospitals, 1686 dispensaries, 361 orphanages, 104 leper asylums and 32 institutions for the blind and deaf. So far as figures are available, they indicate the continued growth of the churches established by the missions, both Roman Catholic and Protestant, although in China the rate of increase has slowed down, especially since the disturbances of 1925.

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See: PROSELYTISM; CONVERSION, RELIGIOUS; RELIGION; RELIGIOUS INSTITUTIONS; CHRISTIANITY; BUDDHISM; ISLAM; SECTS; DOMINICAN FRIARS; JESUITS; FRANCISCAN MOVEMENT; MONASTICISM; REVIVALS, RELIGIOUS; BACKWARD COUNTRIES; EUROPEANIZATION; IMPERIALISM; COLONIES; NATIVE POLICY; EXTERRITORIALITY; FRONTIER; HUMANITARIANISM; CONQUEST.

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MITCHELL, JOHN (1870–1919), American labor leader. Mitchell was the son of a miner of Irish Scotch ancestry. Left an orphan at an early age, he began work at nine, entered the mines of Illinois the following year and at fifteen joined the Knights of Labor. In the later 1880's he joined the westward trek, returning to Illinois in time to participate in the bloody struggle of 1889 and to join the newly organized United Mine Workers. This union exercised no real power until the national soft coal strike of 1897, which ushered in the first significant nation wide collective agreement. As leader of the difficult southern Illinois sector of the struggle Mitchell gained election to the national vice presidency in 1898 and shortly thereafter became acting president when his predecessor was appointed to governmental office. In 1899 he was elected to the presidency and was reelected until 1908, when he resigned because of ill health. From 1908 to 1911 he was chairman of the Trade Agreement Department of the National Civic Federation, resigning when the miners' union forbade membership in that body. At the time he was under indictment for violation of the injunction in the Buck Stove and Range case. After some years of free lance lecturing on labor problems he was appointed commissioner of labor of New York state in 1914 and later became chairman of its Industrial Commission, serving in that office until his death. Within the American Federation of Labor he served from 1899 to 1900 as fourth vice president and from 1900 until 1914 as second vice president.

In his time Mitchell was second in importance only to Gompers, and he was proposed more than once as his successor. The coal miners' union, which grew from 40,000 to almost 300,000, formed the bulwark of the American Federation of Labor, still struggling to establish itself. Mitchell fought narrow craft tendencies within his organization and succeeded in wresting from the Scranton convention of the American Federation of Labor in 1901 the right to organize on the basis of industrial unionism. The miners represented the most highly organized of any American industry, and the proportionate and absolute gains in wages and working conditions in the soft coal region were well above the average. At a time when labor leaders fought the machine Mitchell's union accepted its introduction and instituted means for safeguarding the worker against its encroachment on his pay and his security.

The outstanding advocate of "prudent business methods" and the "sacredness of contract," Mitchell won his widest fame as leader of the five-month strike of the anthracite coal workers. This strike not only resulted in the organization of the 150,000 workers, the majority of whom were immigrants, hitherto split on racial and national lines, divided by craft and sectional jealousies, which often resulted in disastrous sectional strikes, but also represented the first successful encounter with monopolistic industry. The manner in which Mitchell conducted the strike won him the sympathy of a public hitherto antagonistic to unionism and brought to his aid the outstanding radicals and liberals of the time, who hailed him as a new type of labor leader.

Mitchell began as a Populist and a believer in independent political action by labor. Although he was a Democratic appointee and was once mentioned as a running partner for Bryan he never shared the antagonism toward socialists common to his associates in the Federation of Labor. By the strong socialist sector in his union he was much criticized for such matters as the submission to arbitration of the 1902 anthracite strike, his failure to organize West Virginia, the reduction taken by the soft coal miners in 1904, the sectional settlements after the national soft coal strike of 1906, his failure to push aggressively for a universal system of industrial unionism within the American Federation of Labor and his advocacy of the policy of "sacredness of contract." His fame among the miners as a

strike leader, a bargainer and a general who kept factional fighting at its lowest ebb in the history of the miners' union and his reputation for ability, industry and honesty seem to have survived the announcement made shortly after his death that he had left a fortune of a quarter of a million dollars.

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MITCHELL, JOHN THOMAS WHITEHEAD (1828–95), English cooperative leader. Mitchell, who was born in Rochdale, Lancashire, and began work in a cotton mill at the age of ten, depended for his education on Ragged Schools, Congregational Sunday schools and his own efforts. In 1853 he joined the Rochdale Society of Equitable Pioneers and became equally interested in the educational, trading and manufacturing sides of the growing cooperative movement. In 1874 he was elected president of the Cooperative Wholesale Society and he served in this office until his death, living very simply on the small income then attaching to the post.

During the period of Mitchell's leadership the struggle between the approach to cooperative manufacture through producers' or consumers' societies reached its highest point and the British cooperative movement was something of a laboratory of social and economic experiment. Mitchell's experience convinced him that a unity of interests in business leading to a prosperous industrial world could be secured only through a nation wide and ultimately world wide cooperative organization of consumers. Such organization was feasible because the large elementary needs are similar the world over; furthermore consumers' conscious control would be right and sound, because the satisfaction of human needs is the beginning and end of labor and the only justification for capital. Both capital and labor would then be directed to real community service, and the distribution of economic surpluses to domestic consumers would end poverty. Such organization would obviate the necessity for any special machinery or bonuses to protect or remunerate the employees of the consumers' cooperatives in their role as producers. Essentially a man of action, Mitchell never elaborated his theory; but the striking success of the organizations which began in small obscure societies and which followed the principles he championed (although sometimes with imperfect understanding) is testimony of his insight.

P. REDFERN

Consult: Redfern, P., *John T. W. Mitchell, Pioneer of Consumers' Co-operation* (Manchester 1923), and *The Story of the C. W. S.* (Manchester 1913); Webb, Beatrice, *My Apprenticeship* (London 1926) p. 355–95.

MITCHELL, WILLIAM (1832–1900), American jurist. Mitchell, who was born in Canada, attended school and college in Pennsylvania, was admitted to the bar in Virginia and settled in Minnesota in 1857, serving on the Supreme Court of that state from 1881 to 1900. Some of his opinions have had so important an influence upon the development of the law as to entitle him to a place among the outstanding figures in the history of the American bench. He first put the duty of the stockholder to contribute toward the payment of corporate debts upon an intelligible basis by effectually demolishing Story's attractive formula that capital stock is a "trust fund" for the creditors [Hospes *v.* Northwestern Mfg. Co., 48 Minn. 174 (1892)]. His judicial method was realistic, the manner simple and direct. In dealing with trade and labor organizations he centered attention upon the facts of economic life, pointing out the "illusive meaning" that lay in such words as monopoly, trust, boycott and strike [Bohn Mfg. Co. *v.* Hollis, 54 Minn. 223 (1893)]. Possessing a clear conception of the social end of law he placed business usage above "mere theoretical logic" in determining questions of commercial law [Hastings *v.* Thompson, 54 Minn. 184 (1893)]. In constitutional matters he refused to press judicial power to an extreme and readily conceded the claims of the legislature to affect vested rights by enacting laws for the general welfare. He was a pioneer in sustaining laws regulating warehouse rates and prohibiting ticket scalping. In holding that an action was maintainable for injuries to land in a foreign jurisdiction he consciously departed from all English and American precedents, demonstrating that the contrary rule rested on archaic premises regarding the selection of the jury and that it often left the injured owner wholly without remedy [Little *v.* Chicago, St. Paul, Minneapolis and Omaha Railway Co., 65 Minn. 48 (1896)].

ORRIN K. MCMURRAY

Consult: Jaggard, E. A., in *Great American Lawyers*, ed. by W. D. Lewis, 8 vols. (Philadelphia 1907–09)

vol. viii, p. 385–430; Lees, Edward, in *Minnesota Law Review*, vol. iv (1919–20) 377–401; "Proceedings in Memory of Associate Justice Mitchell" in *Minnesota Reports*, vol. lxxix (St. Paul 1901) p. xxi-xlix.

MITRE, BARTOLOMÉ (1821–1906), Argentinian statesman, journalist and historian. Mitre was born in Buenos Aires and grew up on the pampas. Self-taught and of versatile mind, he is numbered among the two or three figures who have contributed most to the development of orderly civilization in Argentina since the beginning of the constitutional period in 1853. He was a sincere democrat and liberal; during the tyrannical regime of Rosas he was in exile. As a *porteño* he played a prominent part in the history of the relations between the Confederación Argentina, which was formed in 1853, and the province of Buenos Aires, which held itself aloof. He became governor of Buenos Aires in 1860, and it was only when he attained as a result of military action the political headship of the confederation that national political unity was finally consummated in 1861. As the first constitutional president of the reunited nation (1862–68) he and his administration sought to strengthen unity by a policy of tolerance and moderation, including freedom of elections, and by furthering communications, land settlement, customs reform, education and codification. Even in advanced age Mitre remained influential and the leader of a party following centering in Buenos Aires. In 1870 he founded the informative newspaper the *Nación*, through which he also wielded a powerful political influence and educated two generations of journalists; in the possession of his descendants it remains one of South America's great dailies. Mitre was interested in the historical and philological sciences and established a very rich museum of manuscripts, books and medals relating to America, which is now a state institution. As a historian he used biography as a guiding thread through events. He traced the growth of the idea of Argentinian independence in the *Historia de Belgrano* (written in 1857), a frequently revised work which he defended in an important polemic carried on with Vicente Fidel López, and dealt with Spanish American independence in the *Historia de San Martín* (1877–78). These fundamental works are based upon the critical use of abundant documentation including unedited materials; they are set forth in a strict combination of chronological and logical sequence with impartiality and little literary embellishment. Although it has been disputed, corrected and supplemented on many points Mitre's historical work together with his apologies for it has oriented the methods of later investigators, who have respected him as a master.

ROBERTO F. GIUSTI

Works: *Historia de Belgrano*, 2 vols. (Buenos Aires 1859; 4th definitive ed., 3 vols., 1887; new ed., 4 vols., 1927–28); *Historia de San Martín y de la emancipación sud-americana*, 3 vols. (Buenos Aires 1877–78; 3rd ed., 4 vols., 1903), abridged translation by W. Pilling as *The Emancipation of South America* (London 1893); *Comprobaciones históricas*, 2 vols. (Buenos Aires 1881–82); *Archivo del General Mitre*, 25 vols. (Buenos Aires 1911–13); *Arengas*, 3 vols. (Buenos Aires 1902).

Consult: Biedma, José Juan, Biography in Mitre's *Arengas*, vol. iii, p. 241–315; Rivarola, Rodolfo, *Mitre, una década de su vida política 1852–1862* (Buenos Aires 1921); Frers, Emilio, *Mitre, el político* (Buenos Aires 1921); Victorica, Julio, *Urquiza y Mitre* (new ed. Buenos Aires 1918); Rojas, Ricardo, "Bartolomé Mitre, His Intellectual Personality" in *Inter-America* (English ed.), vol. v (1921–22) 69–70, 181–96.

MITSUI, a powerful and wealthy family of bankers, industrialists and merchants, whose name is prominently identified with nearly three centuries of Japan's economic development. The family lineage goes back to Fujiwara no Kamatari, a noted statesman of the seventh century. During the latter part of the sixteenth century Mitsui Takayasu was forced to flee his castle during the internecine strife that marked the end of the Ashikaga era. His son Sokubei decided to devote himself exclusively to commercial activity, engaging in the brewery trade. Sokubei's youngest son, Takatoshi, who is regarded as the founder of the present house of Mitsui, worked as a lad in his brother's drapery shop in Yedo (Tokyo) and later returned to his native village, where he became a money lender under the name Hachirobei. At the age of fifty-one he left his village and opened a drapery shop in Yedo. He was later appointed purveyor to the shogun and established similar shops in Kyoto and Osaka. After operating an exchange department in his drapery shop he opened his first exchange house in the money market center of the capital in 1683, following with another in Kyoto and a third in Osaka. In 1691 the shogun appointed twelve fiscal agents, of whom two were of the Mitsui family, to effect the transmission of money from the Osaka treasury to the Yedo treasury by means of credit balances rather than by the dangerous and costly transport of specie. They were often called upon by the shogunate to participate in forced loans and served also as

bankers to the imperial court. Takatoshi had fifteen children, through whom he set up a number of branch families, the heads of which were placed in charge of his various establishments. He died in 1694 leaving a will upon which the family constitution was framed and under which today a council composed of representatives of each of the eleven Mitsui families controls and directs all their business enterprises and supervises marriages, adoptions and other family matters.

In 1708 the Mitsui established their first contacts with foreign trade when they placed purchasing agents at Nagasaki to buy foreign goods at the one port of entry, and thereafter they played an extremely important part in the expanding import and export trade of Japan. With the restoration of the emperor in 1868 the Mitsui continued as court bankers. They were called upon to finance the imperial army through the early days of Meiji, to participate in loans to the government, to transact a good part of the exchequer business of both national and local treasuries, to act as fiscal agents of the mint and to issue convertible notes for the government. They set up the first modern private bank in 1876, with branches all over Japan, and floated the first public loan of the government. They participated actively in Japan's industrialization, by direct organization of enterprises as well as through their investment banking operations. After the Bank of Japan was established in 1882 they ceased to handle the fiscal business of the Treasury but continued to have close financial relations with the government. In April, 1932, when the Japanese government desired to lend a large fund to the new regime in Manchuria in order to establish a government independent of China, Mitsui and Mitsubishi were called upon to advance the funds. The Mitsui are important shareholders in the South Manchuria Railway.

In addition to enterprises under their direct control the Mitsui own stock in many other companies, on whose directorates they are frequently represented. Their interests now include shipping, warehousing, engineering, mining, insurance, banking, tropical plantations, steelworks and many other kinds of manufacturing besides foreign and domestic commerce. Their foreign agents are said to outnumber the Japanese consuls. The Mitsui are considered the most influential element in the *Seiyukai*, or conservative, party.

JOHN E. ORCHARD

Consult: Mitsui and Company, Ltd., *The House of Mitsui* (Tokyo 1927); Mitsui Bank, Ltd., *The Mitsui Bank, a Brief History* (Tokyo 1926); Mitsui and Company, Ltd., *The Development of Anglo-Japanese Trade* (Tokyo 1927); Viator, "Étude sur les grands consortiums de commerce japonais" in Société Franco-Japonaise de Paris, *Bulletin*, nos. 62–66 (1924–25) 53–70; "House of Mitsui" in *Fortune*, vol. i, no. 2 (1930) 72–81; Rea, G. B., "Mitsui—Where Business Is Humanity" in *Far Eastern Review*, vol. xxi (1925) 497–505; "How the House of Mitsui Helped the Seiyukai Ministry" in *China Weekly Review*, vol. lix (1932) 211–12; Beringer, P. N., "The House of Mitsui" in *Overland Monthly*, n.s., vol. lv (1910) 90–96.

MITTEIS, LUDWIG (1859–1921), German jurist. Mitteis was primarily a Romanist. Of his *Römisches Privatrecht bis auf die Zeit Diokletians*, planned as a comprehensive exposition of the subject, only the first volume appeared: *Grundbegriffe und Lehre von den juristischen Personen* (Leipsic 1908). While this work secured him an honored place among jurists it did not represent his pioneering achievement, which proceeded in a different direction.

By a stroke of good fortune he became acquainted with the work of the Viennese papyrologist Karl Wessely in editing the papyri in the collection of Archduke Rainer of Austria, which constituted an unsuspected miniature of everyday law from the fourth century B.C. to the eighth century A.D. Not content to interpret philologically the Greek legal sources of the Greek and Roman law in this and other collections Mitteis addressed himself rather to the problem of determining the significance of the law that was actually recognized in practise and its relation to the official Roman law, which often differed considerably from it. He soon established the surprising fact that the imperial Roman law was not everywhere recognized in practise, especially not in the Hellenistic provinces. While the official imperial law often asserted itself against local customary practises, it was often forced to tolerate them. The unity of the imperial Roman law was a figment.

It was soon conceded by the leading Romanists that Mitteis had established a new point of departure in the study of the Roman law. Mitteis' great service lay in his evaluation of the papyri, which he was the first to use for juridical purposes and which offered an incomparable opportunity for securing a knowledge of the juristic life of the people. The Syrian-Roman law books, already studied by Bruns, to whom, however, they had represented merely a misunderstanding of the imperial Roman law, provided Mitteis with another such opportunity. Mitteis

was the first jurist to take active and critical part in the publication of new papyri; he wrote the legal part of the *Grundzüge und Chrestomathie der Papyruskunde* (2 vols., Leipsic 1912), on which he collaborated with Ulrich Wilcken. While it is possible that in estimating the Hellenistic synthesis of Greece and the Orient he placed too strong an emphasis upon the Greek elements, his *Reichsrecht und Volksrecht in den östlichen Provinzen des römischen Kaiserreichs* (Leipsic 1891) still remains fundamental in Romanistic research. The question of origins, which can be answered only after painstaking special investigations, is the task of juristic papyrology and cuneiform legal history. Only by such means can the legal as well as the cultural historian solve the old riddle of the shares of Rome, Hellas and the Orient in the development of the culture of the ancient world.

LEOPOLD WENGER

Consult: Wenger, Leopold, *Ludwig Mitteis und sein Werk* (Vienna 1923).

MITTELEUROPA. *See* PAN-MOVEMENTS.

MITTEN, THOMAS EUGENE (1864–1929), American street railway administrator. Mitten, the son of an English immigrant, began his career as a telegraph operator. Becoming an executive with the Milwaukee urban electric railways in 1895, one of his first problems was a strike, which he won at great cost to the workers. During the next few years he experimented in Milwaukee, Buffalo and Chicago to secure employee loyalty by more generous treatment; in this work as well as in the general management of the lines Mitten achieved considerable success.

In 1911 bankers trying to rehabilitate the Philadelphia Rapid Transit Company, which had been wrecked largely by strikes and financial trouble, placed Mitten in control. Under a recent strike settlement the workers had been promised a gradual increase in wages. Mitten now offered a plan by which the workers should "do more to get more." Wages were to be maintained at the same percentage of the company's gross passenger revenues as the percentage in 1911; as the men cooperated with the management to produce more revenues, their wages were to be increased. The men voted to have the company deal directly with them rather than with a union, although the company recognized the right of employees to bargain collectively upon all matters affecting wages, working conditions and discipline. Organization for carrying out the plan was to consist of graded committees composed equally of employee and employer representatives, with a final arbitration board including representatives of the public. The basis of wage adjustment was subsequently changed and the cooperative plan improved and expanded. The plan was given a full trial, but while it has prevented serious labor disturbances since 1911, this object seems not to have been achieved without supplementary measures of labor coercion.

Wages in the first years under the Mitten plan were higher than those provided for under the prior strike settlement, and the resulting increase in loyalty aided greatly in improving the company's position. Employees collectively became large stockholders of the company. Mitten's financial policy later placed the company in a precarious position with a consequent great loss to the employees. He also took voting control away from the employees by a stock trade manoeuvre.

E. ORTH MALOTT

Consult: Pamphlets and annual reports published by the Philadelphia Rapid Transit Company, especially *The Mitten Plan for Collective Consideration and Co-operative Benefits* (Philadelphia 1926), and *Mitten Men and Management* (Philadelphia 1922); Lauck, W. Jett, *Political and Industrial Democracy 1776–1926* (New York 1926).

MITTERMAIER, KARL JOSEPH ANTON (1787–1867), German jurist. As professor of criminal law, criminal procedure and German private law he shed luster on the University of Heidelberg for forty years, from 1821 to his death. Hearers from all lands attended his lectures, and in foreign countries he was the best known and most highly regarded of German jurists. As such he exercised an extraordinary influence. For two decades he engaged not only in scientific but political activity, which led him first in 1831 to the Baden Diet and in 1848 to the National Assembly in Frankfort.

Mittermaier's chief importance lies in the fields of criminal law and criminal procedure. In the former he championed the greatest possible subjection of the judge to the law, the transformation of the penal system in harmony with the spirit of the times and the complete abolition of capital punishment. In the latter he fought for a liberal reformation of the existing procedure upon the model of the French law, with which he had become acquainted first as secretary of the great criminalist Feuerbach and from 1819 to 1821 as professor at Bonn. As the

goal of reform he envisaged a system of criminal procedure which like the French should rest upon the principles of publicity, orality, party presentation and free evaluation of proof. In a sensational speech at the great congress of Germanists in Lübeck in 1847 he also announced himself as an adherent of the jury system in its English-French form; this amounted practically to its official recognition by German legal science, which had hitherto opposed it. Almost all of the laws relating to criminal procedure in the period after 1848 owed their origin to his assistance or at least were influenced by his criticism as a publicist. The chief interest of his later years was prison reform. As a firm adherent of separate confinement and the American penitentiary system he championed with force and success the humanization of the contemporary German scheme of punishments. In order to ease the abruptness of a prisoner's transition from prison life to freedom he demanded the institution of a transitional stage with congregate confinement, as in the Irish system.

Mittermaier is also one of the founders of modern comparative law. He considered it his mission to bring German legal science out of its isolation and into contact with the theory and practise of other lands, particularly the English speaking countries. His arduous labor of decades had in this respect an almost unbelievable measure of success. For the periodicals which he edited he himself wrote over a period of nearly five decades countless essays covering all the more important publicistic and legislative happenings in foreign countries. He sought also to deepen his already great knowledge of foreign law by constantly undertaking new journeys which led him into all the countries of western Europe and which made him personally acquainted with most of the important jurists of his time.

ERICH SCHWINGE

Important works: Die Lehre vom Beweise im deutschen Strafprozesse (Darmstadt 1834); *Die Mündlichkeit, das Anklageprinzip, die Oeffentlichkeit und das Geschwornengericht* (Stuttgart 1845); *Das deutsche Strafverfahren in der Fortbildung durch Gerichts-Gebrauch und Landes-Gesetzbücher*, 2 vols. (Heidelberg 1827, 4th ed. 1845–46), chs. xiii, xv tr. in Esmein, Adhemar, *A History of Continental Criminal Procedure*, Continental Legal History series, vol. v (Boston 1913) p. 13–36; *Grundsätze des gemeinen deutschen Privatrechts* (Landshut 1824; 7th ed., 2 vols., Regensburg 1846–47); *Das englische, schottische und nordamerikanische Strafverfahren* (Erlangen 1851); *Der gegenwärtige Zustand der Gefängnisfrage* (Erlangen 1860); *Die Todesstrafe* (Heidelberg 1862), tr. as *Capital Punishment*, ed. by J. M. Moir (London 1865); *Erfahrungen über die Wirksamkeit der Schwurgerichte in Europa und Amerika*, 3 vols. (Erlangen 1864–65).

Consult: Stintzing, R. von, and Landsberg, E., *Geschichte der deutschen Rechtswissenschaft*, 3 vols. (Munich 1880–1910) vol. ii, pt. iii, p. 413–37; Goldschmidt, Levin, in *Archiv für die Civilistische Praxis*, vol. l (1867) 417–42, tr. in *Great Jurists of the World*, ed. by John Macdonell and Edward Manson, Continental Legal History series, vol. ii (Boston 1914) p. 544 60; Lilienthal, Karl von, and Mittermaier, W., in *Zeitschrift fur die gesamte Strafrechtswissenschaft*, vol. xliii (1922) 157–81.

MOB. The mob is often confused with the crowd, to which it is closely related. It is almost universally regarded as a direct contact group, in which the participants strongly intercondition one another or receive the same or similar stimuli from some leader or from some external source, thus producing highly unified, but not necessarily continuous or logically consistent, collective behavior. Its behavior is ordinarily highly erratic and more intense than intelligently purposive. Sometimes the mob is not able to concentrate on any definite procedure but merely mills about, wasting its energies in uncoordinated emotional expression, incoherent discussion or gesticulation until a leader effects concentrated action. Some psychologists apply the term mob also to indirect contact groups which manifest these traits, but others question whether such groups may properly be considered mobs. The term mob spirit is applied to highly emotional and poorly coordinated behavior and expression when they occur in either direct or indirect contact groups.

The mob considered as a direct contact group is a highly excited form of the crowd. When it is an indirect contact group it may be regarded as an emotional public. The terms crowd and public are, however, ordinarily applied to less excited groups, although they may possess no more—or even less—organization than the mob. In many cases a well organized and ordinarily stable group, such as an army, a parade, a group of factory workers at their machines or even a deliberative assembly, may be converted more or less suddenly into a mob upon the presentation of sufficiently strong stimuli; as, for example, by an idolized leader or a slogan to which the members are strongly conditioned, by the hostile action of police, by an invading army or by some sudden cataclysm, such as a fire, a tidal wave or a cyclone. Casual crowds, such as those on the street, at picnics or in theaters and auditoriums, easily become mobs through such agencies.

Mobs may be classified psychologically as purposive and active and as confused and random in their behavior. The former types are invariably under the influence of leaders or of strongly activating shibboleths and emblems. The latter types are usually composed of frustrated or panicky individuals, whose normal behavior patterns have been inhibited by a period of repression or by a sudden violent interference or by strongly concentrated suggestion. In both cases the ordinary responses of the individuals constituting the mob have been disconnected from their habitual stimuli, thus removing the usual inhibitions and behavior controls. If such a breakdown of the habitual inhibitions occurs because, for example, a revolutionary leader takes possession of a deliberative assembly (in which the rules of order and the customary procedure previously have constituted the ordinary control stimuli and inhibitions), either of two results may occur. If the majority of the members are favorably conditioned to the leader's personality and principles, a purposive mob results. In such a case the leader and his principles become the effective substitute stimuli (to which the responses of the members have previously been effectively conditioned) to initiate excited purposive action of a revolutionary character. Sometimes the behavior of armies is transformed in this manner and is suddenly redirected against the persons whom a short time before the soldiers were ready to defend with their lives. Similarly a group of workers or a prison population may be suddenly transformed into a destructive rioting mob, or a camp meeting into a lynching bee. But such radical redirection of behavior can be brought about by the substitution of stimuli only if there has been previous conditioning of responses to the new stimuli. If, on the other hand, the members of the group have not had their responses favorably conditioned to the new leader and his principles, his appearance in the deliberative assembly will not produce excited purposive mob behavior along the lines suggested by the new leader and his ideas but will result in a mob responding in a confused and random manner. Spasmodic resistance may be offered by some of the members, while others will rush about more or less aimlessly or seek to escape and a few will become incoherent and incapacitated. Similar conditions often obtain at theater fires, on sinking or burning steamers and at bargain sales.

Mobs develop with special ease under social conditions in which conflicting interests, ideals and controls are prevalent. The presence in close proximity of two or more races with fairly distinct customs, traditions and standards; of distinct social classes, such as capitalist and labor, rich and poor; of radically distinct religious alignments, each sect or religion holding firmly to its own tenets; of two rival gangs, each intent upon dominating the situation; or of two or more political parties, each with its patronage and graft to protect and candidates to elect, is especially conducive to the appearance of the mob spirit and of mob action. Such conditions easily evoke race, class, religious or partisan animosities and hatreds, which become chronic prejudices. If the accompanying conflicts and tensions are strong enough, a state of fear and uncertainty bordering on the pathological, even the hysterical, may be created. The result of such social conditions is that the individual becomes strongly conditioned to two or more conflicting sets of stimuli, perhaps positively to one and negatively to the other. Somewhat after the manner of suggestibility in hypnosis one set of responses may be quickly freed from customary inhibitions and substituted for the other set of socially approved responses, thus setting up the psychological condition known as mob spirit. The presence of other persons responding in the same manner further breaks down inhibitions and intensifies each individual's excited responses. In this way the mob may become highly irrational, uncontrolled, antisocial and destructive, which behavior may at times end in fatigue and uncoordinated dissipation of energy, in which the original object of its enthusiasm may be forgotten.

Mobs rarely accomplish much of permanent constructive value; frequently their premature organization and action interfere with a more deliberate and careful solution of the difficulty of which they are the social symptoms. Sometimes they are organized by interested parties for the purpose of preventing constructive action or of stirring up additional animosities and thus of forcing the opposite side to terms. Such rule by force and fear rarely if ever accomplishes valuable social results but more frequently redounds to the advantage of those who profit by disorder and lawlessness. Occasionally, however, the violence of the mob appears to be the only method by which a dominant group can be dislodged from a position it holds unjustly through force or unfair legalized privilege. Mobs are regarded on the whole as moral anachronisms in modern society and numerous attempts are made to prevent and control them through laws,

rules of order, religion, conventional ethics, the inculcation of good breeding, courtesy and chivalry and the use of the police and the military. Not infrequently the action of the police and the military when so employed takes on the character of mob counterviolence.

L. L. BERNARD

See: CROWD; GROUP; COLLECTIVE BEHAVIOR; SOCIAL PSYCHOLOGY; COMMUNICATION; AGITATION; PROPAGANDA; LEADERSHIP; IMITATION; SUGGESTION; COERCION; RACE CONFLICT; RIOT; MASSACRE; LYNCHING.

Consult: Ross, E. A., *Social Psychology* (New York 1908) chs. iii–v; Le Bon, Gustave, *Psychologie des foules* (29th ed. Paris 1921), tr. as *The Crowd* (14th ed. London 1922), and *La révolution française et la psychologie des révolutions* (Paris 1912), tr. by B. Miall as *The Psychology of Revolution* (London 1913), and *Enseignements psychologiques de la guerre européenne* (Paris 1915), tr. by E. Andrews as *The Psychology of the Great War* (London 1916); Sighele, Scipio, *La folla delinquente* (2nd ed. Turin 1895), revised in 2nd ed. of French translation (Paris 1901), and *Psychologie des sectes* (Paris 1898); Tarde, Gabriel, *L'opinion et la foule* (Paris 1901); Martin, Everett Dean, *The Behavior of Crowds* (New York 1920); Davenport, F. M., *Primitive Traits in Religious Revivals* (New York 1905) ch. iii; Bernays, Edward L., *Crystallizing Public Opinion* (New York 1923) pt. ii; Odegard, Peter H., *The American Public Mind* (New York 1930) ch. ii; Notch, Frank K., *King Mob* (New York 1930).

MOBILITY, SOCIAL. Social mobility is the movement of individuals or groups from one social position to another and the circulation of cultural objects, values and traits among individuals and groups. It may be designated as horizontal mobility when the individual or group transition occurs on the same social level from the standpoint of income, standard of living, prestige, occupational status, educational privileges and duties or when the movement, migration, shifting and diffusion of cultural elements are within the same social stratum of the population; for example, the spread of radios and Christian Science among the American middle class from New England to California or the diffusion of communism among the Russian proletariat. Vertical mobility, which is the transition of an individual, group, cultural object or value from one social stratum to another, may be ascending or descending. It may proceed along several social ladders: the economic, when an individual, group or cultural value passes from the poor to the rich classes or vice versa; the occupational, when the movement is from the lower to the higher occupational strata or vice versa; the socio-political, when, for example, a plain citizen becomes a dominant leader of the state, a slave becomes a free citizen, a peasan changes his juridical status to that of a nobl or vice versa. Horizontal and vertical forms o social mobility are sometimes closely interwoven.

Vertical mobility, to which this analysis wil be limited, proceeds incessantly in practically al societies in the form of individual transition. It is always true that some persons are becoming richer, some poorer; some are being promoted some demoted in their occupational and political status, prestige, privileges and heritages. Vertical mobility sporadically assumes the form of group elevation when an entire group, like the Communist party in Russia after the revolution or the Christians after the legalization of the Christian church in the Roman Empire, is elevated in the pyramid of a stratified society. It sporadically assumes the form of group degradation when a complete group, like the aristocracy of the Romanovs, Hapsburgs or Hohenzollerns, is suddenly demoted from the top of the society. Similarly, cultural objects, traits and values move vertically from one stratum to another either as an infiltration of a single cultural trait isolated from its whole configuration, as the use of bathtubs, a particular rule of etiquette, a song or a perfume; or, more rarely, as a vertical transplantation of a complete cultural configuration or culture complex, as a standard of living, a religion, a moral code. The usual direction of this cultural movement is from the upper to the lower classes, from the city to the country, from the educated to the uneducated strata; but the opposite cultural movement is always present to a certain degree. In periods of great social upheaval and catastrophes the latter often becomes dominant.

Vertical mobility varies quantitatively and qualitatively in different societies and fluctuates from period to period in the same society. During the classical period of the caste system in India vertical mobility was weak, while in contemporary western society, on the contrary, it is strong in both directions. During periods of war and times of political, industrial, economic, religious and other social upheavals mobility increases; during periods of social stagnation it decreases. The development of standardized education and of improved means of communication and interaction generally favors vertical movement of cultural values; the development of exclusive class standards, class education and special juridical and religious barriers hinders it. The insufficient reproduction of the upper class-

es in many societies often creates vacancies in the upper positions, making it necessary that they be filled with persons from the lower strata. The appearance in the lower classes of talented persons excellently fitted for the upper positions and the appearance of failures in the upper classes are also factors of vertical mobility. Some of these individuals are always in the process of changing their position; if their circulation is hindered and they accumulate in large numbers within the improper stratum, a violent disruption of the social order may take place. This phenomenon is one of the most important processes of revolutions and upheavals. The incessant change of social environment which to a smaller or greater degree goes on in any society is one of the permanent factors of mobility. Any new invention, discovery, calamity or general alignment of social forces promotes some individuals and groups and demotes others.

Social institutions as the army, the church, the school, political parties, money making and occupational organizations serve as the channels of vertical circulation through which individuals ascend or descend the social ladder of their stratified society. In any society at a given period one of these institutions may play a dominant part, as, for example, the army in time of war, the church in mediaeval society and money making organizations or the school in contemporary western society. With the exception of periods of anarchy mobility is strongly controlled by the complex social machinery of testing, selection and distribution of individuals with regard to various social positions. The family, the church and the school test the general intelligence and character of the individual according to their standards; when the individual enters an occupational institution he is tested for the specific ability necessary in the successful performance of definite functions. These institutions therefore serve as social sieves; they perform not only educational and training functions but selective and distributive functions as well.

The process of vertical mobility exerts a series of important influences upon social life both by selecting the population of various strata and by mixing together the descendants of the upper and lower classes. Thus at any given moment the population of any social class is composed of persons recruited from the most diverse walks of life. The most effective distribution of individuals among various social positions is achieved if everyone is rewarded according to his talent and if the standards of the machinery of social testing and distribution are sound. Vertical movement of cultural values and traits is one of the most potent factors against the isolation, antagonism and struggle of different social strata. It facilitates the diffusion of science, art, beliefs and manners; it gives a broad foundation and deep roots to any cultural achievement and prevents a collapse of culture through its dissipation among the masses. Intensive vertical mobility increases plasticity and versatility of behavior and stimulates progress in thought, discovery and invention. On the other hand, it appears to increase mental diseases when there are difficulties involved in adaptation to the new situation. Mobility makes the social structure elastic, breaks caste and class isolation, undermines traditionalism and stimulates rationalism. Its direct and indirect influences on all aspects of social organization are complex and potent.

P. A. SOROKIN

See: MIGRATIONS; EMIGRATION; IMMIGRATION; FRONTIER; CHANGE, SOCIAL; ASSIMILATION, SOCIAL; SOCIAL DISCRIMINATION; CASTE; STATUS; CLASS; CLASS CONSCIOUSNESS; OCCUPATIONS; URBANIZATION; HOME OWNERSHIP; ISOLATION; ETHNOCENTRISM; COSMOPOLITANISM; DIFFUSIONISM; COMMUNICATION; TRANSPORTATION.

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MOBILIZATION AND DEMOBILIZATION. The entire conception of what mobilization involves has been radically altered by the events of the World War. Even before 1914

there had been, especially after the Franco-Prussian War of 1870, a growing realization that in any future war mobilization would have to extend over the greater part of the national man power and would involve a substantial interference with the normal economic life of the nation. The development of large conscript armies, accompanied by a rapid growth in the elaborateness and cost of military equipment, had made obsolete those theories of mobilization which were conceived in terms of relatively small standing armies provided with an equipment that could be supplied without any strain on the general economic systems of the belligerent countries. But side by side with the growth in the scale and complexity of armaments there had grown up in many people's minds a firm belief that future wars were certain to be short because the issue would be decided almost at the moment of the first onset and because it was thought to be impossible for nations to stand for any protracted period the human, economic and financial strain of modern warfare. In the drawing up of plans of mobilization therefore emphasis had been laid rather on speed of movement and the quick placing in the field of a large, well equipped and trained army than on the supply of this army with continuous drafts of reenforcements and a continuous stream of fresh munitions and engines of war. The conception of a small standing army fighting its battles with comparatively small reactions on the way of living of the nation as a whole had indeed given way, at any rate in France and Germany, to the conception of a nation in arms. But the nation in arms was conceived far too much, as events proved, in terms of military man power and far too little in terms of equipment and of the maintenance of production behind the lines to meet the needs both of the armies and of the civilian populations. In Great Britain indeed the conception of the nation in arms despite the lifelong advocacy of Lord Roberts had made no general conquest even of military opinion, and the predominant view in 1914 was still that the British function in a world war would be that of keeping the seas and of throwing into the conflict a small and highly trained expeditionary force capable in collaboration with the larger armies of its allies of turning the issue at the first encounter. In Great Britain equipment had been thought of in the terms appropriate to a small professional army of this type and hardly at all in terms of an army running into millions of effectives.

It is true that this question of the nation in arms had been raised in an active form more than a hundred years before the World War at the outset of the war of defense waged by revolutionary France in the years immediately following the revolution of 1789. At that time the French found themselves threatened by hostile armies on all their frontiers and in imminent danger of military collapse. Their first thought was to augment their forces in the field by the method of the *levée en masse*—that is to say, by calling to the colors every able bodied man who could be mobilized—and plans for the *levée en masse* were seriously debated and began to be carried out. It was, however, speedily realized by the Committee of Public Safety that the *levée en masse* would be utterly fruitless unless provision was made for the supply of the armies in the field with an adequate quantity of munitions of war and that the available munitions were in fact far below the requirements even of the armies already in the field. In these circumstances the Committee of Public Safety set to work resolutely, in place of calling the entire man power of the nation to arms, to organize the supply of munitions of war. This task was rendered the more difficult both because France had been largely dependent on imported iron and steel and because some of the most important metal working establishments were near the frontier districts which had fallen into the enemies' hands, while others were under the control of persons whose loyalty to the new republic was at least suspect. Prodigious efforts were made to collect available stores of metal, to teach steel making processes to workmen hitherto unaccustomed to their use and to mobilize for industrial service workmen from a variety of occupations whose skill could be adapted to the making of munitions of war. The great center of the new manufacture was at Paris; but commissioners were also sent throughout the provinces to aid in the reorganization, to bring about a reconstruction in the existing establishments, such as those of Le Creusot and Indret, and to bring new establishments into existence. With the aid of these measures, which were carried through with extraordinary expedition, the French armies were so reequipped that they were able to roll back the invaders beyond the frontiers and before long to penetrate well beyond the boundaries of revolutionary France. At first, while these advances into new territory were still regarded as precarious, every effort was made to destroy all establishments suitable

for the manufacture of armaments in the occupied territories, the plant and available materials being carried back for use in France; but at a later stage, particularly in the case of Belgium, great efforts were made to use the occupied areas for the production of an additional supply of munitions. It is well known that Belgian industrial development is closely connected with the use made of Belgian productive resources for this purpose during the French occupation. At the same time the French engaged in a vigorous contraband trade, in the smuggling in of raw materials and of munitions from beyond their frontiers, large quantities being obtained from Germany via Switzerland in the early years of the revolutionary war. The lesson that the nation in arms is a meaningless expression unless there is a proper balance between the mobilized man power and the supply of munitions and commissariat would thus seem to have been driven home by the experience of France in the revolutionary wars. It had nevertheless been largely forgotten even by the French themselves before 1914; or rather the French conceived that modern wars would be waged under very different conditions and therefore adopted what turned out in the event to be a mistaken view of the essentials of military preparedness.

It is appropriate at this stage to attempt a brief review of the position and attitude in 1914 of the leading European powers. In France more than in any other country the doctrine that success was likely to depend on swift offensive action by a large trained army capable of very rapid movement held the field and had been made the basis of military preparation. The aim of the French military service system, based on three years' conscript service followed by a period in the reserve, had been to provide in face of the deficiency of French man power in relation to that of Germany the largest possible trained force that could be thrown immediately into the field. As this force was thought of as essentially an offensive body, its equipment had been designed rather for swiftness of movement and action than for the type of trench warfare which became predominant within the early months of the war. Moreover, as the issue was thought of as depending primarily on the outcome of the first offensive, comparatively little thought had been given either to the use and equipment of second line reserves or to the maintenance of a continuous supply of munitions and other requisites for the armies in the field.

The Germans on their side shared in full the French view of the importance of taking the offensive and realized that their situation made this imperative, because if operations were once allowed to proceed upon German territory the areas in which their coal mines and metal works and engineering establishments chiefly lay, being near the frontiers, would probably be put out of action. They too had therefore endeavored above all to provide themselves with an army well equipped for taking the immediate offensive; but far more than the French they had understood the possibility not only that the war might be protracted but also that they might find themselves by the British command of the seas cut off from external supplies and compelled to depend upon their own economic resources. This had led them to pay considerably more attention than either the French or the British to the economic aspects of preparation for war, but even they had by no means realized in advance either what the duration of the war was likely to be or the enormous calls which it would make on their industries. The chief difference in German and French preparedness lay in two things: first, in the greater emphasis which the Germans had placed before 1914 on the economic side; and, secondly, in their more effective use of their trained reserves, whereby they were able to bring their superiority in man power immediately into play by creating at once new units based on the reserve, thus duplicating at once the whole of the conscript army actually in service in time of peace. Alone among the powers they had realized that, given a large body of highly trained officers and technical personnel and a sufficient initial equipment, it would be possible to use reservists at the very outset of hostilities as an offensive force side by side with the personnel already under arms. These two things were indeed the very foundations of the initial German success. The magnitude of the forces which Germany was able immediately to throw into the front line upset all the French calculations and placed the Franco-British forces upon the defensive—a strategy which their previous preparations rendered singularly disadvantageous to them.

Of the other European belligerents it is only necessary here to add a few words about Russia. Russia possessed a large army and enormous reserves of man power, but it was singularly deficient in both technical equipment and trained leadership, while even its high command was riddled with corruption and nepotism; and, be-

ing far less industrialized than the powers of western Europe, it was from the first far more largely dependent on its allies for munitions and equipment and thereby far less able to improvise the necessary supply services by the transformation of its industries to meet war needs.

When the United States entered the war in 1917 the situation was in certain respects not unlike that of Great Britain in 1914. The United States had a small professional army but even less than Great Britain any commensurate trained reserve. It had vast industrial resources; but almost nothing had been done in advance even to consider the use of these resources for the purposes of war, although in practise the large growth of its exports to the allied countries between 1914 and 1917 had prepared the way for the rapid transformation of its industrial system to a war basis. It was consequently possible very quickly to adapt the industries of the United States to a hugely increased output of war supplies, and as by the time the United States entered the war the chief problem of the allied countries was coming to be a serious deficiency of man power for both filling up the gaps in the fighting forces and keeping their industries at work, the task set before the United States was from the outset reasonably clear. It had as speedily as possible to train a large new army to fill up the depleted ranks of the fighting forces in Europe and it had meanwhile so to increase its output of supplies as to enable its European allies, by depending more on it for war supplies and for meeting the needs of their civil populations, to release more of their industrial personnel for military service.

It will be understood from what has been said that all the belligerents who entered the war in 1914 had radically to alter their conceptions within a few months of its beginning and that this was especially true of France and Great Britain. The checking of the great German offensive short of Paris brought home to the French high command the probability of a protracted defensive war involving the occupation of a long front extending the whole length of French territory from Switzerland to the sea. The defense of this line was obviously bound to involve an enormous expenditure of resources in the supply of the necessary munitions and transport as well as the provision and equipment of a vast army for a protracted period. But the German offensive had been successful in occupying and thus putting out of action a large sector of French territory in which lay a considerable proportion of France's industrial resources, particularly in the heavy industries. While therefore efforts were made rapidly to develop new sources of supply by the use of the industrial resources still remaining behind the French lines, a far larger share than had been originally anticipated of the task of keeping the allied armies supplied with war equipment necessarily fell on the metal and engineering industries of Great Britain. Until the supplies from the United States began to come in, Great Britain was called upon to play the chief part in supplying munitions of war not only for its own rapidly growing forces but also for its allies.

Even in these circumstances it was some time before any drastic reorganization took place in the British heavy industries in order to fit them for this service. For some time after the outbreak of war the War Office continued to rely, in placing its orders for munitions, on the few government factories and on those contractors who had been regularly engaged in supplying armaments before the war. Originally the whole question was left in the hands of the War Office and it was not until March, 1915, that a distinct and semi-autonomous organization was set up inside the War Office to take control of the supply of munitions. Out of this special department of the War Office grew in the summer of 1915 the Ministry of Munitions as a separate government department with a political head of its own occupying a seat in the cabinet. Some attempts had been made earlier in the year to speed up the output of shells and other munitions of war by creating in various parts of the country armaments committees representing employers and trade unions and by establishing a Committee on Production to lay down general lines for the development of the munitions services in their relation to labor. When the Ministry of Munitions was established the armaments committees were allowed to fade out of existence, the Committee on Production became merely a body for arbitrating on wages and conditions of labor, and the work of organizing the munitions services was taken over directly by the ministry. The Munitions of War Act passed in July, 1915, established compulsory arbitration in the industries providing war supplies, prohibited strikes and lockouts and provided locally for the suspension of trade union restrictions. At the same time it set up a system of "controlled establishments"; that is to say, of factories scheduled for the production of munitions. These factories were brought under direct government control

under a system by which their profits were limited and the greater part of any excess profits made in consequence of the war was to pass directly to the state. The system of controlled establishments was, however, limited to engineering, shipbuilding and other metal working firms and was not originally extended to cover either the coal industry or such industries as the Yorkshire woolen trade, which were also engaged in producing munitions in the wider sense.

The Munitions of War Act of 1915 was the first comprehensive attempt at the regulation of industry under state control. It was, however, in the early stages of the war so administered as to interfere as little as possible with the British traditions of private enterprise and laissez faire. Firms were instructed to carry on as usual apart from any special regulations made for them under the act, and so far from simply commandeering the various establishments the government continued to make contracts with them in respect of each particular order for goods. At this stage the entire emphasis was on speed of supply rather than cost, and many of the contracts made with munitions firms in 1915 and 1916 were on an exceedingly extravagant basis. The use of "cost plus profit" contracts in the early stages led to wide divergences in prices; but as the prolongation of the war put new emphasis on costs, uneconomical factories were assisted or compelled to adapt themselves to conditions of wartime production and "fixed contract" prices were more uniformly used. During 1916 the system was gradually tightened, but it was not until 1917 that control was anything like complete.

At the same time the problem of labor supply was becoming more and more acute. In the act of 1915 provision had been made for the enrolment of a class of workers known as war munitions volunteers, who were invited to enrol for special service and were thereafter transferable to any factory where the Ministry of Munitions considered their services to be specially needed. At this time Great Britain was still working under a system of voluntary military service, and the entire position was changed with the advent of military conscription. This came by stages, culminating in the Military Service Act of January 27, 1916, under which compulsory service was instituted for all men up to forty years of age on March 2, 1916, the period of compulsion being subsequently extended to include men up to fifty years of age. The introduction of compulsory military service at once involved the taking of decisions as to the number of men who could be spared from the munitions works and from other industries for enlistment as soldiers, and side by side with military conscription a system of "starring" was introduced, whereby men who were starred by the Ministry of Munitions or other responsible government departments could be exempted from actual calling up. There was also under the Military Service Act a system of local tribunals before which men could apply for exemption on occupational as well as other grounds. As the need for fresh recruitment to the fighting forces grew more pressing during the later years of the war, more and more stars were withdrawn and exemption on occupational grounds was revised; and at the same time the standard of physical fitness required for military service was progressively lowered. By these means more and more men were combed out until the great mass of the less skilled workers of military age had been taken out of the factories and there remained of the original labor forces only those possessing a high degree of skill.

The gaps thus caused in the ranks of industry had of course to be filled up. This was done to a large extent by withdrawing workers unfit or over military age from the less essential occupations and transferring them to the essential industries, by the increased employment of women and young persons and by progressive mechanization designed to reduce the total demand for labor. But man power in the munitions industries had also to be supplemented by other means. To some extent highly skilled workers had to be recalled from the colors for industrial service, and men who had been so wounded as to be unfit for further service but were still suitable for industrial work were sent back to fill up the gaps in the factories.

In France with its previously established system of compulsory military service the problem of man power in industry became at an early stage even more acute than in Great Britain. In pursuance of their theory of a short offensive war the French began by calling up men almost without any regard to industrial requirements; but as soon as they had to settle down to prolonged trench warfare it became evident that large numbers of those who had been taken away would have to be returned to industry if production was to be kept up on the requisite scale. Accordingly a system of requisitions from employers for men who had been enlisted was

introduced and very large numbers of men were returned from military service under this scheme, retaining the status of reservists liable to recall in case of need. In the later stages of the war France also introduced a system of discharging from further military service the surviving members of those families which had suffered exceptionally heavy losses in the war, and this release of men provided a small additional flow of workers back into industry and still more into agriculture.

In Germany, as has been seen, steps were taken immediately upon the imminence of war to double the effective strength of the army already in service by the formation of reserve units, and at the same time men were called up to create a further reserve for the filling of gaps in the ranks. Measures were also taken immediately to organize German industry in face of the shutting off of supplies from outside. A special administration was formed at the War Department under Walther Rathenau for the organization of the supply of necessary raw materials as well as for research into the provision of substitutes for those materials of which a deficiency was certain to arise. Drastic steps were taken to requisition available supplies of materials and to set German industries at once on a war footing. In this respect Germany moved far more swiftly than the allied governments toward a system of rigid state control and economic mobilization. Meanwhile the civil authorities were largely superseded by military administrations, and Germany was divided into a series of military areas each under the authority of a general responsible to the War Department. In 1916, as the problem of man power and military and civil supplies became still more acute, a more thoroughgoing conscription of labor was instituted under what was known as the Hindenburg program, including the so-called law of auxiliary services. The militarization of the "home front" went so far as to provoke in 1917 a strong reaction on the part of German public opinion; and this necessitated some reassertion of the civil authority. But throughout the war the industrial mobilization of Germany was treated in effect as an aspect of military mobilization under the control of the War Department.

In the United States the earliest measures of importance designed in view of the outbreak of war were the formation of the Council of National Defense in August, 1916, and the setting up in March, 1917, of the Munitions Standards Board, which became the General Munitions Board in the following month. The administrative weakness of these organizations led to the eventual formation of the powerful War Industries Board, which controlled the entire productive activity of the United States, the buying, selling and allocation of raw materials and labor and the facilities of transportation by land and sea. It determined all matters of priority, had the responsibility of fixing prices for staple commodities and acted as a coordinating body for the other wartime industrial agencies. These included the War Trade Board, the Shipping Board and Emergency Fleet Corporation, the Food and Fuel administrations, the War Labor Board, the Allied Purchasing Commission and the Railroad Administration, which operated the railroads of the country as a unit under complete federal control. Deriving its authority from the great wartime power of the president the War Industries Board fulfilled virtually the function of a general staff for American industry. In May, 1917, the Selective Service Act came into force, and provision was made under it for the immediate enlistment of 1,000,000 men. By the end of the war this number had been raised to 3,665,000, of whom more than 2,000,000 were actually in France. By the same date the number of workers, men and women, engaged on war work had risen to approximately 9,500,000. The main problem in the United States was to strike the right balance between the sending of military units to fill up the depleted allied lines in Europe and the organization of an adequate supply of foodstuffs, munitions and other requirements for the fighting forces and the civil populations of the allied countries. In the main the policy adopted by the Allied and Associated Powers was that the United States should send to Europe as many troops as it could consistently with the maintenance of necessary supplies of foodstuffs and raw materials and that the Allies, who had by that time largely solved the problem of munitions supply, should help the American army with munitions of war, being enabled so to do by the release of men from active service as they could be replaced by American soldiers.

The war not only made necessary industrial mobilization within each country but also led to a general supervision of the production of the allied nations relatively to each other. This control was of course not so strict or so closely defined as in the case of individual countries, but it was effective in correlating interallied needs and resources. Interallied control was exercised through the Supreme War Council,

which had supervision over both military and industrial affairs. The Interallied Conference and the Interallied Munitions Council were more directly responsible for the formulation of the broader principles of interallied industrial cooperation. They produced, for example, the Interallied Ordnance Agreement, by the terms of which at the beginning of American participation in the war the United States shipped raw and semifinished materials to England and France, whose wartime industrial establishments were already in operation, thus doing away with the delay which would otherwise attend the building up of America's war industries. Shipping was also subject to international control. In addition to the cooperative supervision a large degree of coordination was achieved through negotiation and agreement among the individual nations, as, for example, the work of the various allied missions to the United States.

The credit crisis which came with the outbreak of the World War emphasized the importance of financial as well as industrial mobilization. Large stocks of goods had to be created for war purposes; they had also to be paid for. The problem was a twofold one: the available supply of money and credit needed to be increased and mobilized and to be directed into the necessary channels. The funds could be secured either by drawing on the existing fiscal resources of the nations through taxation or bond issues or by creating new credit directly through the issuance of paper money or indirectly through advances from a state bank of issue in the form of banknotes. All the belligerents heavily increased their taxation and floated large popular loans. Great Britain and the United States largely financed the war in this way; the other countries were forced to adopt the other form of financing to a greater or lesser degree. The allied nations with lesser resources also secured large loans from Great Britain and the United States, particularly the latter.

So great was the need for war funds that the governments were forced to regulate strictly the movement of capital within each country, diverting it from non-essential industries to those necessary for the successful carrying on of the war. When the United States entered the war a Capital Issues Committee was formed to pass on and limit new security issues of all kinds. A similar control over new capital issues had been established earlier in the European countries involved in the war, and this control had in most cases to be retained for some time after the war ended. In the United States this function passed in 1918 to the War Finance Corporation. Organized with a capital of $500,000,000 owned by the United States government, the corporation had the additional function of extending new credits to essential industries and to savings banks and public utilities. Similar forms of control and assistance were exercised by the other nations.

When the Armistice was concluded in November, 1918, the various governments were at once confronted with the problem both of demobilizing the large armies on the western front and of placing their industries which had been diverted to meet the needs of war once again on a peacetime footing. The Russian armies had indeed some months earlier, in Lenin's phrase, "voted with their feet" and returned in disorganization to their villages; and in Austria-Hungary the dissolution of the empire into its constituent parts had resulted in a disorderly break up of the armies, accompanied by an extraordinarily confusing situation in each of the new states in process of formation on the ruins of the empire. But in the other countries demobilization had to proceed in accordance with a regular plan. On the one hand, the men were themselves for the most part overwhelmingly anxious to get home and exceedingly reluctant to submit to a continuance of war discipline when in their view the need for it had passed. On the other hand, not only did transport present considerable difficulties but it was certain that if the armies apart from such forces as it was intended to retain under arms were demobilized at once, there would for the most part be no jobs waiting for them when they got back, and serious social upheavals might arise as a result of their return before industry could be placed on a footing to receive them. The workers who had been brought into the war industries between 1914 and 1918 had to be transferred to a great extent to other jobs in order to make room for the returning soldiers; and the whole process of change over in industry was bound to take time, even if, as most people then supposed, there was likely to be work for all as soon as the necessary reorganization had been carried through.

The technique of demobilization had therefore to be based on a compromise. The demobilized soldiers were to be returned to civil life as speedily as there was any hope of absorbing them, but their anxiety to return home had to be curbed in order to avoid the dangers of civil

disturbance either in the military units or at home. France had in this respect a simpler problem than Great Britain, for a large mass of her conscripts were agriculturists who could for the most part at once go back to their holdings, and there was a great mass of work waiting to be done in the rebuilding of the devastated areas. French demobilization apart from the relatively large army of occupation retained in service was therefore comparatively rapid, and even in the case of Great Britain demobilization had to be speeded up beyond what had been intended in consequence of the growing difficulties experienced in keeping order in the military camps now that hostilities were at an end. This involved some form of provision for demobilized workers until they were able to find jobs; and it was also necessary to make provision for the discharged munitions workers, whose transference to other occupations was bound to take time. For these purposes a system of "donations" was introduced. Demobilized soldiers were entitled to draw in addition to the gratuity accruing to them on discharge a weekly donation benefit as long as they remained unemployed; and a similar donation on a smaller scale was also provided for unemployed munitions workers. This donation system was thereafter gradually superseded by the introduction of a general scheme of unemployment insurance under the act of 1920. By these means demobilization was actually brought about without any serious degree of civil disturbance or industrial dislocation. This was largely due to the fact that during 1919 and 1920 there was a brisk demand for labor, and industry prospered partly under the stimulus of renovation work urgently needed in consequence of the ravages of war; and partly because a rapidly rising price level due to inflation swelled industrial profits and induced employers to take on a rapidly increasing quantity of labor. The short lived post-war boom did not break until the latter months of 1920; by that time demobilization had been successfully carried through and the dangers of civil disturbance inherent in it successfully overcome.

In the meantime the various forms of state control over industry which had been introduced during the war were in most of the belligerent countries being rapidly liquidated. Alike in England, France and the United States there went up from employers on the morrow of the Armistice an urgent cry for a "return to pre-war conditions" and for the immediate abrogation of state control of industry. Despite warnings that there were serious dangers in abolishing at once the elaborate systems of control which had been built up, the employers' demands were in most cases speedily conceded. Munitions factories and shipping were decontrolled, and the industries which had been under government surveillance also regained their freedom at an early stage. In England only in the case of the coal mines was it found necessary, on account of the extreme scarcity of coal in Europe and the need for preventing an abnormal rise in prices in the home market, to retain the system of control for a longer period. Government control of the coal mines did not finally lapse until the spring of 1921 and then only after the great post-war slump had set in to the accompaniment of an embittered dispute resulting from the cutting down of wages by the employers as soon as state aid to the industry was withdrawn.

The experience of the war years could not, however, be in practise so easily disregarded. In the first place the various governments in order to mobilize economic resources during the war had been compelled to call into being a far stronger organization among the employers in the various industries than had existed up to 1914; and these employers' associations and combines, although they ceased after 1918 to act as agents for the government or under the government's orders, maintained their existence, so that in all three countries capitalism emerged from the war far more highly organized and with far more tendency toward collective action than it had possessed hitherto. Moreover in both Great Britain and France the effect of the war had been to strengthen considerably the trade union movement and the forces making for the enactment of industrial legislation. And the workers in these countries retained after the war a part of the protective measures which had been adopted between 1914 and 1918 in the interests of industrial peace. The French trade union movement did indeed before long lose most of the strength which the war had added to it because of the internecine disputes between its Communist and orthodox wings. But in Great Britain and also in Germany a substantial part of the new code of industrial legislation became permanent and trade union power was considerably enhanced. In the United States constitutional difficulties stood in the way of any considerable development of industrial legislation; and the trade union movement there profited far less from the war than movements in

the European countries. The return to laissez faire was most complete in the United States and least complete in Germany.

In Germany indeed the circumstances of the post-war years compelled the state to retain a large measure of control over industry. German post-war economic policy was influenced largely both by the terms of the peace treaties, which compelled the government to keep a tighter hand on economic development, and by the internal situation, which gave right wing socialism a great measure of influence in the framing of the legislative code of the new German Republic. Nor was there in Germany the same traditional belief in laissez faire as in other countries. In consequence of these facts the wartime organization of industry pioneered by Rathenau largely survived in the state recognition and organization of cartels as well as in the industrial legislation of the immediate post-war years.

Moreover in all countries the lessons of economic organization during the war struck deep roots in many people's minds; and even where employers and traders were strong enough to force an almost complete abrogation of wartime forms of state control, the war left behind it as a legacy the idea of organized national planning which has since found more startling expression in the two Five-Year plans of the Soviet Union. Capitalists themselves became readier to recognize under post-war conditions the need for organized planning, and non-socialist projects for various forms of planning to be carried through as part of a general scheme for the rationalization of industry were put forward from time to time. Except in Germany these ideas have not yet borne much practical fruit; but they are undoubtedly much in men's minds, the more prominently because of the successful establishment of socialist planning in Russia.

Ideas of military mobilization as well as of economic organization have been fundamentally changed by the World War. In spite of the League of Nations and efforts at disarmament military plans of mobilization have continued to be conceived in terms of possible future wars on the same scale as that of 1914 and therefore involving the complete mobilization of national man power, both military and economic. In these plans far greater stress is now laid than before 1914 on the probability of any future war being protracted and exhausting and in the sphere of munitions on the indispensability of a rapid mobilization of productive resources for the supply not only of tanks, airplanes and other engineering products but also of those gases with which no nation really believes that any other will when the time comes be prepared to dispense. The economic aspects of mobilization therefore receive in military quarters far more attention than before the war, and the close relationship between military and industrial mobilization is more clearly appreciated.

G. D. H. COLE

See: WAR; WARFARE; NATIONAL DEFENSE; ARMY; NAVY; CONSCRIPTION; MILITIA; MERCENARY TROOPS; WAR FINANCE; MORALE; LIMITATION OF ARMAMENTS; DISARMAMENT; MUNITIONS INDUSTRIES; DIPLOMACY.

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MOBILIZATION, INDUSTRIAL. *See* MOBILIZATION AND DEMOBILIZATION.

MOCHNACKI, MAURYCY (1803–34), Polish writer and patriot. From early youth Mochnacki was active in secret patriotic societies, striving for the restoration of political independence for the Polish nation. He soon gained fame as a literary critic and champion of romanticism. Influenced by German philosophy, particularly that of Schelling and Schlegel, his works nevertheless show considerable originality. Mochnacki participated actively in the outbreak of the insurrection against Russia in November, 1830, and founded the Towarzystwo Patryotyczne, the patriotic society in which in the early days of the insurrection he played a leading role in opposing negotiations with Russia. Believing that the measure would strengthen the cause of Polish independence, he advocated the abolition of serfdom and the distribution of land among the peasants. After the collapse of the insurrection, in which he was wounded several times, Mochnacki emigrated to France, where he took a most active part in the political organization of the émigrés. He attempted in numerous articles to construct a theory of revolutionary tactics which would assure the success of a future uprising. In his exclusive concentration upon the goal of political independence he lost sight of the social aspects of the revolutionary struggle and even effected a rapprochement with the conservative-monarchical wing of the Polish émigrés, for which he was bitterly attacked by the democratic elements, his erstwhile allies. The last years of his life he devoted to his chief work, *Powstanie narodu polskiego* (The insurrection of the Polish people, 2 vols., Paris 1834), which became the political manifesto of succeeding generations.

ARTUR ŚLIWIŃSKI

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MODERNISM may be described as that attitude of mind which tends to subordinate the traditional to the novel and to adjust the established and customary to the exigencies of the recent and innovating. The practical effect of this attitude may be either conservative or revolutionary. It is conservative where the subordination of the old to the new saves the old from destruction through desuetude or attrition. It is revolutionary where the subordination takes the form of a nullification of the old via desuetude and attrition. The conservative species of modernism occurs among religions; the revolutionary species occurs in the arts. Significantly, neither species of modernism occurs in the sciences. Already in the eighteenth century Rousseau—in a letter to M. D., January 15, 1769—had described the humanitarianism, rationalism and tolerance of the *philosophes* as modernism, contrasting them thus with the traditional privilege, authoritarianism and coercion prevailing in society as a whole. Rousseau meant to indicate by modernism not so much a conflict with as a differentiation from the prevailing social attitude. The conceptions of modernism as conservative and revolutionary have accrued to it since. Often, the attitude of rebellion against the old, and the attitude of conserving the old by transforming it from within interpenetrated, so that their consequences became difficult to distinguish. Both attitudes are modernistic by virtue of the high valuation they lay upon the new present as distinguished from the contemporary or the past.

The dominant component of the new present

is prevailingly science. Never regarded as modernist in itself, science has been the occasion of modernism in everything else—from economics, sex and politics to religion and art. But the attributes "modernist" or "modernistic" have been attached preeminently to the last two. Modernism indeed might be described as the endeavor to harmonize the relations between the older institutions of civilization and science.

In religion this is notoriously the case. Modernism entered that institution with the French Revolution. Before the revolution the ecclesiastical establishment had been explicitly identified with supernal revelation, eternalism, dogmatism, government by divine right, the priority of church over state, the conception of personal life as the practise of obedience and devotion to the church. The French Revolution made a practical and dramatic application of the notion of the *philosophes* that institutions were made for men, not men for institutions. The socio-political economy it sought to set up was to be such as would serve men by establishing and maintaining among them "liberty, equality, fraternity." It asked men to refuse to love the king for what he was in order to love the state for what it did and initiated thus the love of country which has since been such a ruling passion. It transformed the French state into the French nation, changed subjects into citizens and made nationalism and patriotism interchangeable terms.

To the lower orders of the clergy this change was as great a liberation as to the secular lower orders. Many became notable in the humanitarian and patriotic endeavors of the period, and they naturally desired the same enlargement in the church that the state had brought them. They did not cease to cherish the church but they now cherished it as an instrument, the precious and unique instrument of salvation; and they refused any longer to hypostatize the instrument and to treat it as an end in itself. Men, they and their lay comrades declared, do not exist for the sake of the church; the church exists for the sake of men. Figures like de Lammenais, Lacordaire and Montalembert in France, Gioberti and Rosmini in Italy, exerted their utmost to identify Catholicism with the democratic and humanitarian movements of the times.

But such movements were postulated upon views of nature and man resting upon the discoveries and interpretation of the sciences; and if the church took to the one it would have to take to the other. Thus the point of departure for a Catholic philosophy of democracy and lovingkindness in contradistinction to the traditional legitimism and absolutism would have to be the methods, the conceptions, the implications of the sciences. These, applied to the church itself, altered it from an unchanging supernatural order, divinely ordained and divinely inspired, into a historical establishment undergoing the changes and chances of historical fortune in all respects—in government, in dogma, in power. If there is unchanging identity behind the changes in history, it could be elicited only by dialectic interpretation, not empirical observation. As *Il programma dei modernisti* later declared: "Everything in the history of Christianity has changed—doctrine, hierarchy, worship." Why not then accept the fact rather than seek to explain it away? Everywhere men show the same religious spirit; everywhere they use different ideas and symbols to express it. The church, its dogmas, its sacraments, are also such expressions, and every later moment of its history is a better, more adequate symbolization of that spirit than its predecessors. Take this evolutionary view of the religious establishment, and the conflict of religion with science disappears; dogmas and sacraments lose in authority but gain in richness, adaptability and strength to survive. Thereby too the conceptions and methods of science become part and parcel of the equipment of religion itself. Historical method, archaeology, philology, anthropology and all the rest become simply techniques which the human spirit uses to discover to itself its own progress toward God. When dogmas are seen as variable symbols and sacraments as faith nourishing signs, when conscience takes precedence over authority, the union of men into a church ceases to be a regimentation by revealed authority from above and becomes a precious and indefeasible social heritage; God is drawn down from His high mountain whence He ordains an outer campaign for salvation and becomes a dweller in every human heart. So, substantially, taught Duchesne, Loisy, Blondel, Le Roy, Fogazzaro, Tyrrell, von Hügel and many others.

Protestants modernized earlier than the Catholics. Indeed Protestantism is in essence ecclesiastical modernization. Scientific method in religion, higher criticism, humanitarian passion and the like started and grew to strength in the Protestant world. But what is specifically known as modernism in the Protestant churches came later and received the name by Catholic analogy.

Modernism, says Atkins, is the engagement of the Christian mind "with the emerging scientific mind." "It would be foolish," he continues, "to say the massive Roman Catholic order has remained unchanged, but compared to the penetration of the Protestant mind by the scientific mind, Catholicism remains relatively untouched. . . . If religion maintains itself against science it will maintain itself by the use of its own weapons." The point is well made. Catholic modernists were a comparatively small handful, ultimately extirpated from the church by ecclesiastical authority. Among Protestants modernists are in control of the great and powerful church organizations. What is known as fundamentalism is fighting a rear guard action against them. It speaks for a backward agricultural population to whose consciousness the sciences of nature and man have not yet reached. Where they have reached, the reconciliation of dogma and sacrament with evolution, higher criticism and humanitarianism progresses consistently; at the same time differences between sects are disregarded, and all move toward mutual tolerance, free cooperation and unification of interests.

The same thing is true among Judaists. Intransigent and abstract reform and intransigent and ceremonially particularistic orthodoxy, which had been at swords' points, are coming together in a *tertium quid* which is characteristically a modernism. Reformers restore ceremonial and practise dietary law, declaring that they thus merely symbolize the social solidarity and historic continuity of Judaists and Judaism. The orthodox profess agnosticisms and even atheism without altering their orthodox way of life. For both the old has been preserved by penetrating it with new meanings.

In the arts modernism has a different signification. Modern art is not the same as modernist art. Modern art begins in the romantic reaction against classicism, and that also came with the French Revolution. The revolutionary government appointed as art dictator the painter David --himself a hot revolutionary who as a member of the Convention of 1792 voted to execute the king. David had been trained in the school of Rome, and so long as he was dictator the tradition of classical symbolism and *buon disegno* characteristic of that school provided the media for revolutionary expression in pageants, fêtes, painting and sculpture. Thus the republic of Rome became the pictorial hieroglyph of the republic of France, events in Roman history, of events in the revolutionary history of France. Napoleon when he came to power retained David, making him head of the restored academy that had been abolished by David himself as feudal. He had him paint commemorative pictures of imperial history and develop the "anecdotal" theme. Between the revolution and Napoleon the traditional patronage of art ceased. On the return of the Bourbons David went into exile in Belgium. Neither he nor any other artist had any state or church or prince thereof to paint for. Their market was now speculative, their public indeterminate. To live they had to call attention to themselves. To call attention to themselves they had to oppose authority and tradition and emphasize individuality. The first step was to repudiate the school of Rome and to set up the Gothic mode against the classical. The second was to stress color as against *il buon disegno*, reality as against symbolism. The protagonist of the endeavor was Delacroix, himself born in the revolutionary tradition; from his beginnings flow the colorfulness, the passion, the realism and the sordidness of modern art.

Modernist art developed as a reaction against modern art, and it was a reaction precipitated by the impact of science. The impact came from two sources. One was the theorizing about color vision by physicists like Helmholtz and Young. The other was the invention of photography. Painters thought at the beginning that the camera could state existence as no painter could; that when it came to portraiture and the like, it would cause technological unemployment. If then the painter was to survive he must produce something that the camera could not produce. And since the inference was easy that a machine cannot utter emotion, to utter emotion became a prime objective among painters and sculptors. Nor in its beginnings could the camera reproduce color. The artist could. He could state in terms of color the intensity of light, its relation to shadow, how it is reflected, how obstructed and so on. From observations in a textbook on color vision developed the varied techniques of juxtaposing colors to express form, atmosphere, depth, action, everything. Colors juxtaposed on the canvas seen from a certain distance mixed on the retina and made a picture. And so painters like Monet and Renoir and Pissarro and Manet painted in that way, calling themselves impressionists. These impressionists may be described as the inventors of modernist art. This art reconciles science and machinery with painting, using the one to develop the other. From the impressionists break the postimpressionists,

the vorticists, the futurists, the cubists and such. Their purpose is not, however, reconciliation but secession. They turn their backs on both the camera and the tradition. They seek out the primitive, the alien, in time, place and idea. They use it as material to communicate the emotion "which the camera cannot communicate." Their paintings and sculptures intentionally distort their subject matter until it ceases to be subject matter at all and becomes simply and purely an expression of the painter's emotion in the presence of the subject. The logic of such expressionism leads to a complex geometrification of line and color in forms of pure design, with which painting and sculpture approach music. Modernist painting and sculpture thus are geometrical, abstract, distorted, emotional and at once as personal and impersonal as music.

Modernist poetry has a similar character. In such work as that of E. E. Cummings, for example, the size, the shape, the spacing and the patterns of letters, words, punctuation marks, are used as more important vehicles of communication than the sense; the poems are abstract, geometrical, distorted and precise; the movement is all, the meaning nothing. Modernist music, on the other hand, reverses the process. Although it goes in for arrhythmy, distortion and angularity of pattern like modernist poetry, painting and sculpture it endeavors to subordinate movement to meaning and to make music do the work of painting and language. Architecture cannot be said to be modernist because there has never been any need for the building art to seek or to repel reconciliation with science. Functionalism and internationalism in architecture are modern but not modernistic.

The modernistic attitude, in sum, arises where a fission develops in the social or intellectual order because a new invention or discovery has become powerful enough to impose adjustment to itself upon the resistant environment which it has entered as an interloper. The process of adjustment begins in some individual or small group whose life or work has been dislocated. Automatic at first, it soon gets rationalized into a program which wins adherents from a wider and wider range of personalities and vocations. None who ally themselves with the program are likely in the beginning to have any thought of conflict or rebellion. That comes as their conduct and labors arouse the anxieties, the fears and finally the active antagonism of the masters of the traditional establishment—the princes and nobles of the church, the academicians of the arts, the academics of the schools. Antagonism leads to self-consciousness, formal definition and propaganda. Freely cooperative individuals become a disciplined school. Their program becomes in its turn a dogmatic object of faith and authority now fighting for its life not only against the established order it rejected but also against a fresh innovation which rejects it.

The best example of the phases of this development is perhaps the history of modernism in the Roman Catholic church. Orthodox churchmen themselves recognize that this modernism is a truly religious movement ("a religious reaction," says the *Catholic Encyclopedia*, "against materialism and positivism, both of which fail to satisfy the soul's longing"). The modernists desired only the growth of their church in glory and power. But authority at once recognized that modernist desires were incompatible with the status of the hierarchy. It consequently fought with all its power against the democratic movement in which modernism began and by necessary implication the intellectual vision from which it derived. Sixty-nine of the propositions enumerated and condemned in the *Syllabus* of Pope Pius IX would sum up the point of view and express the faith of a liberal anywhere. Leo XIII ascended the papal throne in 1878. Democracy had by that time become generally ascendant in Europe and America. Yet it was not until 1891 that he sanctioned the political and humanitarian activities that grew into Catholic socialism. *Per contra* he had recommended in 1879 the resumption of intensive studies of St. Thomas; in 1893 he warned against higher criticism and in 1899 spoke in strong terms against all phases of modernism. This was due to the effect upon Catholic youth of the brilliant work of Duchesne and Loisy in philology and history and of the fraternizing activities of the Union pour l'Action Morale where Roman Catholics came together with Protestants and Jews, and to the consequent spread of modernist reinterpretation of Catholicism among the younger clergy. Leo's successor, Pius X, did not content himself with admonitions and warnings. Modernist books were placed on the Index in greater and greater number. Unsanctioned participation by the clergy in political or social movements was forbidden. In July, 1907, the decree of the Holy Roman and Universal Inquisition, *Lamentabili sane exitu*, condemned sixty-five propositions, of which thirty-eight deal with Biblical criticism. This was followed in September of the same year by the encyclical

Pascendi Dominici Gregis. Its official title was *De modernistarum doctrinis*. It summed up modernism as nothing but the "union of faith with false philosophy," "the synthesis of all the heresies," and declared it to be due to curiosity, pride and inadequate discipline and indoctrination. A month later in *Il programma dei modernisti* (Rome 1908, new ed. Turin 1911; tr. by George Tyrrell, New York 1908) the modernists replied that it was not their philosophy which led to historical criticism, but historical criticism which led to their philosophy. "Our religious attitude," they said, "is ruled by the single wish to be one with Christians and Catholics who live in harmony with the spirit of the age." They insisted that nevertheless they were loyal sons of the church. But to no purpose. By 1910 the leaders had been excommunicated, their works were forbidden, priests and professors were required to take an oath of fealty to all the required doctrines, and the church by traditional methods was formally purged of modernism. The traditional establishment succeeded in retaining its monopoly and cohesion.

There is no Protestant organization able to bring into action and to employ similar instrumentalities on behalf of the status quo; hence, among Protestants, fundamentalism is recessive, modernism dominant. In the arts there are no vested interests massive enough even to create such an issue. Institutes and academies are confronted by societies of independents, autumn salons and so on, which follow each other in quick succession. After the impressionists changes in the arts have been rather more like changes in the fashions than changes in the faiths. The specific meaning of modernism does not apply to them.

HORACE M. KALLEN

See: CHANGE, SOCIAL; INNOVATION; FUNDAMENTALISM; RELIGION; SCIENCE; ART; ARCHITECTURE; LITERATURE; MUSIC.

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MODRZEWSKI, ANDRZEJ FRYCZ (Andreas Fricius Modrevius) (*c.* 1503–72), Polish political theorist, theologian and statesman. Modrzewski came of a family of Polish nobility. After studying at the University of Cracow he entered the service of the primate Jan Łaski, an orthodox Catholic who strove for the moral improvement of the clergy and advocated the convocation of an oecumenical council to settle the controversies which had grown out of the Lutheran revolt. Under the influence of the younger Jan Łaski, nephew of the primate and one of the founders of the Reformed church, Modrzewski matriculated in the year 1532 at the University of Wittenberg, then the center of the Reformation. Upon his return to Poland in 1540 he participated actively in public affairs, first as royal secretary and later as secretary to the Polish delegation to the Council of Trent. Because of his Protestant leanings he was dismissed from office in 1567 and divested of his episcopal property.

The importance of Modrzewski's social and political theories has on the whole been overstressed. He has been hailed as a herald of the modern state, as an advocate of legal equality and as a representative of the third estate. All these characterizations are incorrect. In principle he favored the preservation of class distinctions and the retention by the nobility of most of its privileges. The significance of Modrzewski's political writings consists in his forceful and penetrating attack upon the unreasonable extension of these privileges. He assailed inequality in the punishment for murder, the legal jurisdiction of the nobility and the restriction whereby burghers were prevented from owning or acquiring land. He made a plea for the inviolability of peasant landed property, for freedom of movement for the children of peasants and for the exemption of the peasants from taxation. Modrzewski's treatment of the division of functions in the state has likewise been overestimated; Gumplowicz mistakenly regarded him as a forerunner of Montesquieu in this respect. Actually Modrzewski made no mention of separation of powers. The four powers which he distinguishes (the fourth is the military) are all centered in the king. He did not allow for any

permanent legislative activity and the parliament, according to his system, was more a court of law than a legislative body. Although he attached particular importance to the judicial power, sovereignty implied, for him, freedom from a superimposed judge rather than freedom from a superimposed law.

The sources of Modrzewski's thought are to be found largely in the classical tradition of humanism and in the currents of the Protestant revolt. From Aristotle he derived his atomistic rationalism and his identification of politics with ethics. He did not, however, as did Aristotle, emphasize the teleological interpretation of nature; and his more empirical method and his attitude on the questions of the evaluation of the individual, slavery and the nature of a just war constitute still further departures from Aristotle. He followed Cicero's view of the state as a *concilia coetusque hominum jure sociatos* as well as his identification of the normative with the existent. Modrzewski's concept of law was more modern, however, in that he did not identify juristic norms with the reign of law in nature.

WŁADYSŁAW MALINIAK

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MOELLER VAN DEN BRUCK, ARTHUR (1876–1925), German man of letters and political writer. Moeller van den Bruck was born in the Rhineland. He began his literary activity with works on the history of art and literary criticism. From 1903 to 1912 he lived for the most part in France and Italy, where he noted among the younger writers the nationalist trend which he recognized as the spiritual and intellectual root of future wars and revolution. In his *Die Deutschen; Unsere Menschengeschichte* (8 vols., Minden 1904–10; 2nd ed. 1910) he attempted to interpret the German national type, its many-sidedness and its historical development. He then launched upon a series of monographs on national psychology which should deal with the cultural values of each nationality. Only two such monographs appeared: *Die italienische Schönheit* (Munich 1913, 3rd ed. Stuttgart 1930) and *Der preussische Stil* (Munich 1916, 3rd ed. Breslau 1931). The World War and particularly post-war events turned Moeller van den Bruck to political writing. His *Das Recht der jungen Völker* (Munich 1919), an appeal to President Wilson in which the author cautioned the United States against a peace policy oriented along French lines, remained without influence. Thenceforth he became the passionate advocate of a national revolutionary regeneration. As leader of the "young conservative" movement he gathered around him all the young German intellectuals of the right who were united in their resistance to the dictates of the Versailles Treaty and in their opposition to western liberalism, democracy, pacifism and international socialism as well as to the forces of mere reaction. The Juni-Klub, founded in 1919, was the focal point of this movement. Besides Moeller van den Bruck, the leading figures in the group were Heinrich von Gleichen, later the founder of the Deutscher Herrenklub, the historian Martin Spahn, the political philosopher Max Hildebert Boehm, the constitutional jurist Heinz Brauweiler and the economist Karl Hoffmann. The *Neue Front* (Berlin 1922), edited by Moeller van den Bruck, Gleichen and Boehm, was the common manifesto of this circle. Moeller van den Bruck's most important essays, collected and published as *Das dritte Reich* (Berlin 1923; 3rd ed. by Hans Schwarz, Hamburg 1931), have become the catechism of all the various currents of contemporary German nationalism and the title has provided the National Socialists with their slogan—"the third empire." Moeller van den Bruck was neither a political tactician nor a systematic theorist. His thought was intuitive in character and his influence on the younger generation in post-war Germany might be compared to that of Fichte's *Reden an die deutsche Nation* during the War of Liberation. His moral earnestness, the beauty of his style and his fine sense of proportion raised him far above the demagogic propagandists of the period and were largely responsible for the powerful influence of his works after his death.

MAX HILDEBERT BOEHM

MOHAMMED (*c.* 570–632), founder of Islam. Little is known of Mohammed's early life before he began his career as a religious reformer. He was about forty years old when he was inspired to communicate a divine revelation to his people in Mecca to the effect that Allah, whom the Arabs already generally recognized as superior

to their other deities, was the sole God. His announcement was met by the majority of the Meccans first with indifference and later with open hostility. Accordingly, after ten years of fruitless activity, Mohammed left his native city for Medina, which was more favorable to his doctrines and where the conflicts between the various tribes had created a situation which demanded a superior leader. This expatriation, the hegira, was the great turning point in Mohammed's life and its date 622 marks the beginning of the Moslem calendar.

In Medina Mohammed molded into one single political organization (*Ummah*) all the different elements of the population, including the Jewish tribes and his own followers from Mecca. Conversion to Islam (*q.v.*) was not yet demanded of the unbelievers, but within the community the group of believers formed a separate unit in which religion replaced the old Arabic tribal idea as a unifying bond. Mohammed's thoughts soon turned to the conquest of Mecca, and after many struggles a truce was reached which recognized his political authority and later gave him access to the holy places. Whereas until then Mohammed had been satisfied merely to conclude political alliances with the Bedouin tribes, he now demanded that they become converted to Islam. This marked a decisive step toward the identification of the religious community with the political organization. The truce with Mecca was broken in the year VIII, but so great was Mohammed's power that no resistance was attempted and he entered Mecca without striking a blow. Most of the inhabitants thereupon embraced the Islamic religion. The political authority of the prophet and with it that of Islam now came to extend over a great part of Arabia; this resulted, however, in a weakening of the religious content of the community, since most of the new converts had embraced Islam from worldly rather than from religious motives. The Jews and the Christian tribes, with whom Mohammed was now coming into closer contact, were allowed to retain their religion upon payment of tribute. In 631 Mohammed proclaimed the *Barā'a*, in which he called for a ruthless struggle against all idolaters opposing conversion and prohibited them from visiting the Caaba.

The sincerity of Mohammed's prophetic convictions is beyond dispute. Religious genius was the most forcefully developed aspect of his personality, and with it was combined an extraordinary political capacity which made it possible for him to prevail as a prophet. His enthusiastic perseverance in Mecca as well as his calculated course of action in Medina was a manifestation of his struggle for an idea which so possessed him that he shunned no means of realizing it. His extraordinary personal influence, which undoubtedly contributed to his success, has left an indelible impress upon Islam.

JOSEPH SCHACHT

Consult: Andrae, Tor, *Mohammed, sein Leben und sein Glaube* (Göttingen 1932); Buhl, F. P. W., *Muhammeds liv* (Copenhagen 1903), German translation by H. H. Schaeder as *Das Leben Muhammeds* (Leipsic 1930); Caetani, Leone, *Studi di storia orientale*, vols. i, iii (Milan 1911–14) vol. iii; Margoliouth, D. S., *Mohammed and the Rise of Islam* (London 1905); Nöldeke, Theodor, *Das Leben Muhammeds* (Hanover 1863); Sprenger, Aloys, *Das Leben und die Lehre des Mohammad*, 3 vols. (2nd ed. Berlin 1869); Muir, William, *The Life of Mohammad* (new ed. by T. H. Weir, Edinburgh 1912); Ameer Ali, Maulavi, *The Spirit of Islam* (rev. ed. London 1922) pt. i.

MOHAMMED II, THE CONQUEROR (1430–81), Ottoman sultan. Mohammed II ruled from 1444 together with his father Murad II, whom he succeeded in 1451. His reign was marked by a series of important conquests, the first of which was the capture in 1453 of Constantinople, which now superseded Adrianople as the Ottoman capital. Further military triumphs followed: Serbia and Bosnia, Greece and the Peloponnesus and most of the islands of the Aegean archipelago were added to Mohammed's empire; he subjugated the Greek empire of Trebizond and after the death of Scanderbeg in 1467 conquered Albania; he took Negropont and Lemnos from Venice in 1470 and Kaffa in the Crimea from the Genoese in 1475. He had already captured Otranto in 1480 when his sudden death put an end to his plans for an invasion of southern Italy.

Mohammed is rightly considered one of the greatest Ottoman rulers. Although his military victories were usually accompanied by massacres and plunder, he made it his policy to reconstruct the captured territories and to make them integral parts of a powerful, centralized, imperial state. After the victory of Constantinople he granted to the Greeks far reaching concessions, allowing them religious freedom and the election of their own patriarch. He raised both army and navy to a high state of development and consolidated the finances of the empire through a skilful system of taxation based on land tenure. Under Mohammed II the Ottoman state acquired the institutions which it retained for

many centuries. The state was regarded as a tent supported by four pillars: the viziers, the judges, the secretaries of state and the ulema, or body of learned lawyers. The provinces, administered by beys, were divided into three classes of holdings: ecclesiastical lands, private lands paying tithes or tribute and domain lands —royal and military fiefs—which in time of war were required to furnish armed horsemen in proportion to the land revenue. The sultan was absolute in power, all Turks being equal before him. Since the nobility had no special legal privileges they were unable to develop the feudal organization characteristic of occidental civilization.

Mohammed was deeply interested in art and literature and was himself an accomplished poet. He was in close touch with the literary, artistic and scientific developments of the Italian Renaissance and summoned Italian scholars and artists to his court. He encouraged architecture, built mosques, schools and colleges and founded hospitals and asylums.

FRANZ BABINGER

Consult: Jorga, N., *Geschichte des osmanischen Reiches*, 2 vols. (Gotha 1908–09) vol. ii, bk. i, chs. i–ix; Zinkeisen, J. W., *Geschichte des osmanischen Reiches in Europa*, 7 vols. (Hamburg 1840–63) vol. i, ch. x, and vol. ii; Hammer-Purgstall, Joseph von, *Geschichte des osmanischen Reiches*, 10 vols. (Pest 1827–35) vol. i, bk. xii, vol. ii, bks. xiii-xviii; "Kānūnnāme Sultan Mehmeds des Eroberers. Die ältesten osmanischen Straf- und Finanzgesetze," original Turkish ed. with German translation by Friedrich von Kraelitz-Greifenhorst in *Mitteilungen zur osmanischen Geschichte*, vol. i (1921–22) 13–48; Creasy, E. S., *Turkey*, ed. by A. C. Coolidge and W. H. Claflin, History of Nations series, vol. xiv (memorial ed. New York 1928) chs. vi–vii; Jacobs, E., "Untersuchungen zur Geschichte der Bibliothek im Serai zu Konstantinopel" in Heidelberger Akademie der Wissenschaften, Philosophisch-historische Klasse, *Sitzungsberichte*, vol. x (1919) no. 243.

MOHAMMED 'ABDU (1849–1905), Egyptian nationalist leader and Moslem reformer. Mohammed 'Abdu was of peasant origin; after orthodox religious schooling he entered in 1866 the theological university of al-Azhar at Cairo, where he studied and lectured until 1880. Here he came under the influence of the Moslem leader, Jamāl al-Dīn al-Afghāni, who turned him from asceticism to an interest in rational mediaeval philosophy and in the significant factors in the political relations between the Orient and the Occident; 'Abdu now perceived the necessity for pan-Islamic union and for the complete reshaping of political and social life in the East if it were to survive the aggressions of the West. He took part in the uprising led by 'Arābi Pasha in 1882 and after its collapse went into exile, at first to Syria and in 1884 to Paris, where he collaborated with Jamāl in the publication of *al-'Urwa al-Wuthqa* (*Le lien indissoluble*), a pan-Islamic weekly dedicated to the struggle of oriental nations against foreign oppression and native despotism. The weekly was attacked by European powers and oriental autocrats, and only eighteen issues had appeared when it ceased publication. 'Abdu's political views became much more moderate after his return to Egypt in 1888, when he resumed his lectures at al-Azhar. He concentrated upon the reform of Moslem education and the adaptation of the traditional social institutions to the exigencies of contemporary life. His appeal against blind obedience to authority and for the critical use of reason was effective in both religion and politics. Although he believed firmly in the supremacy and truth of Islam he strove to regenerate it, urging a return to its original sources as well as cooperation between science and religion. He held that Egypt's freedom would be attained as a result of an evolutionary process of education, and he did much to infuse with a new spirit the tradition bound teaching at al-Azhar. In 1899 'Abdu was appointed mufti, or official interpreter, for Egypt of Islamic canon law. In this capacity his modernizing influence was far reaching. He improved the judicial procedure in the courts of personal statute (*Mahākim*), and by his futwa allowing for the first time the taking of interest and the drawing of dividends he made possible for Moslems the use of savings banks. As founder and president of the Moslem Benevolent Society he introduced modern methods of social work and in this field also attempted to synthesize Islamic tradition and the modern spirit.

'Abdu's writings are varied both in character and in scope. He contributed for many years to the Egyptian journal *al-Ahram* (The pyramids), and for a short period before his exile he had been an editor of the official journal *al-Waqāi' Al-Misrīya*. Most important in their effect upon modern Islamic thought, however, are his theological treatises. His *Risālat al-Tawhīd* (Cairo 1897, new ed. by Rachid Rida 1908; tr. into French as *Rissalat al Tawhid; Exposé de la religion musulmane*, with introduction and complete bibliography of his works, by B. Michel and M. A. Razik, Paris 1925), a complete exposition of the Moslem faith, is still the most

widely read work on the subject; while remaining faithful to the Koranic tradition and to Moslem orthodoxy, 'Abdu held that Islam was above all rational and must therefore be stripped of all the errors with which centuries of practise had encumbered it.

HANS KOHN

Consult: Adams, C. C., "Mohammed Abduh, the Reformer" in *Moslem World*, vol. xix (1929) 264–73; Horten, M., "Muhammed Abduh" in *Beiträge zur Kenntniss des Orients*, vol. xiii (1916) 83–114, and vol. xiv (1917) 74–128.

MOHAMMED AHMAD IBN SAIYID 'ABD-ALLAH (al-Mahdi) (*c.* 1843–85), Egyptian religious reformer. Born in the Sudan, Mohammed Aḥmad studied theology under well known teachers and became a dervish celebrated for his piety and asceticism. In his wanderings through the Sudan he found that the masses had been ruined by the corrupt officials and slave dealers, who flourished under Turkish rule and especially during the reign of the extravagant Khedive Ismā 'īl Pasha. Depressed by these conditions and under the influence of the traditional popular rather than the theological Mahdi concepts, Mohammed Aḥmad experienced his inner call to be the Mahdi, the Islamic Messiah. If his claim to this distinction was at first a purely religious one, there soon became added to it, as in the case of every such oriental movement, political and social elements. Unbearable taxation and forced labor drove the wretched, fanatically superstitious and politically aroused mixed population of the Sudan to join him and after 1881 his movement, Mahdiya, spread rapidly to the south and east. The government's countermeasures were unsuccessful and at his death, soon after he captured Khartoum, Mohammed Aḥmad was the head of an extensive empire in the Sudan. His successor was the caliph 'Abd Allāh al-Ta 'a' ishi.

In accordance with the orthodox Mahdi doctrine Mohammed Aḥmad at first took the Sunna (customs of the prophet) as his model: he appointed four lieutenants who after his death were to serve successively as caliphs; the division of the booty and the administration of the government treasury were patterned closely upon the usages prevailing in the original Islamic community. Soon, however, the Mahdi replaced the Sunna of the prophet with his own, drafted in writing in the so-called *Majlis*. His vulgar mysticism, to which was joined a rigorous asceticism and an idealized concept of the original form of Islam, was hostile to culture. By proscribing religious studies, by ordering the burning of all books except the Koran, his own proclamations, the *Rātib*, a collection of devotions by Mohammed Aḥmad, and the *Majlis*, he repelled the educated classes. Presumably under Wahhabite influence he forbade the worship of saints, magic, ornament, music, elaborate marriage ceremonies, tobacco and wine. He attempted to unite in his own system the four orthodox schools of law and replaced the five Sunnite religious duties by six new ones: common prayer, the jihad (holy war) instead of the Sunnite pilgrimage, obedience to God's commands, confession of the faith enlarged through acknowledgment of the Mahdi and recitation of the Koran and of the *Rātib*.

Some of the elements of the Mahdīya are derived from the Mahdi concept, rooted in Christian Jewish eschatology; others from the ascetic tendency found in the dervishism always popular in Egypt. Mohammed Aḥmad desired, after the old prophecy, "to purify the earth of wantonness and corruption." He preached equality of rich and poor, abolished ranks and titles and rapidly advanced the humble to high positions. A skilful politician, he knew how to unite into one force such conflicting groups as the slaves and the slave dealers. The state which he set up was entirely militaristic but the commander differed from the common soldier only by virtue of the power conferred upon him by the Mahdi. The British under Kitchener destroyed his empire in 1899. Although in his native country his memory has practically disappeared, in Islamic history he is known as the Mahdi.

E. L. DIETRICH

Consult: Dietrich, Ernst Ludwig, "Der Mahdi Mohammed Ahmed vom Sudan nach arabischen Quellen" in *Islam*, vol. xiv (1925) 199–288, with bibliography; Holzmann, M., "Der Mahdi" in *Deutsche Rundschau*, vol. clxxxviii (1921) 64–77; Wingate, F. R., *Mahdism and the Egyptian Sudan* (London 1891).

MOHAMMED 'ALI. *See* MEHEMET ALI.

MOHAMMED 'ALI (1878–1931), Indian Moslem leader. Mohammed 'Ali studied at Aligarh Muslim College and at Oxford and occupied various posts in the Baroda civil service. A fervent adherent of pan-Islamism, he was among the founders of the All-India Moslem League established in 1906 to protect Moslem interests against the rising tide of Hindu nationalism. Subsequent events, however, convinced him of the necessity of a united front on the part of

the oriental peoples and religious groups against European imperialism. The two newspapers which he published before the World War, the *Comrade* in English and the *Hamdard* in Urdu, began to advocate a rapprochement between Hindus and Moslems and became increasingly bitter in their criticism of European aggression against Islamic countries. Because of their pro-Turkish sympathies Mohammed 'Ali and his brother Shawkat were interned in 1915 and later imprisoned by the British authorities. Released at the end of 1919, they became the leaders of the Khilāfat movement in India which aimed at the defense of the Ottoman sultan-caliph's rights and the integrity of his territory as opposed to the anti-Turkish attitude of the contemporary British government; to further these ends Mohammed 'Ali visited England and France. Gandhi's most outstanding political achievement was to make the demands of the Indian Moslems concerning the caliphate the demands of all India; the 'Ali brothers joined Gandhi and the Indian National Congress in the non-cooperation campaign which swept over India in 1920–21 and which created a united Hindu-Moslem front against Britain's Indian policy. Upon his liberation after two years of imprisonment Mohammed 'Ali presided in 1923 at the special Indian National Congress in Delhi which decided that its members might enter the Indian councils and there form the Swaraj party. Meanwhile the Khilāfat question had been settled by Mustafa Kemal's victory over the Greeks, the sultan's deposition and the Treaty of Lausanne. Nevertheless, the 'Ali brothers continued their active interest in pan-Islamism and in freeing Islamic territories, especially the holy places of Islam, Mecca, Medina and Jerusalem, from foreign domination. They participated in the Islamic World Conference in Mecca in 1926. Mohammed 'Ali's insistence on the pre-arrangement of Moslem rights in independent India led to a breach in 1929 between the Khilāfat Committee and the Indian Congress. His last public service was his participation in the first Round Table Conference in London, during the course of which he died.

HANS KOHN

Works: Ali Brothers, Muhammad Ali and Shaukat Ali, *For India and Islam* (Calcutta 1922).

Consult: *Muhammad Ali, His Life, Services and Trial* (2nd ed. Madras 1921); Kohn, Hans, *Geschichte der nationalen Bewegung im Orient* (Berlin 1928), tr. by M. M. Green as *A History of Nationalism in the East* (London 1929).

MOHAMMED IBN 'ABD AL-WAHHĀB (1703–92), Arabian religious leader. Ibn 'Abd al-Wahhāb, the son of a family of Hanbalite Moslem theologians in central Arabia, attacked current divergences from older religious practise and demanded the discarding of all *bid'a* (innovations). The theological panoply for his struggle was furnished by ibn-Taymīya and ibn-Ḳaiyim al-Jawzīya, earlier Hanbalite theologians whose puritanical spirit continually reechoed in Arabia. Smoking and many luxuries were proscribed but ibn-'Abd al-Wahhāb's attack was essentially aimed at religious innovations, such as the worship of saints, holy trees and stones and even the misused adoration of the prophet. Monotheism (*tawḥīd*) in its strongest sense became the central doctrine of his followers, the Wahhabites, who term themselves monotheists (*muwaḥḥidūn*) and regard even other Moslems as polytheists.

This central point of religious practise implied a dogmatic deviation from prevailing Islamic doctrine. Many innovations had achieved recognition through the *ijmā'*, the *consensus doctorum*. Theoretically a question once decided by consensus (even if tacitly) obtained eternal validity. Ibn 'Abd al-Wahhāb materially limited the principle of consensus and insisted that clear declarations of the Koran and ancient tradition could not be superseded by it. Practically he claimed an *ijtihād*, or independent examination of original sources, and thereby placed himself, strictly speaking, outside the dominant Sunnite community.

By winning over Amīr Mohammed ibn-Sa'ūd of Dar'īya, ancestor of the Wahhabite dynasty of Āl Sa'ūd, ibn-'Abd al-Wahhab succeeded in establishing his conceptions in central Arabia. The sect that he founded established a commonwealth which in principles and spirit comes nearest of all Moslem states to the original conception of the prophet Mohammed.

RICHARD HARTMANN

Consult: Hartmann, Richard, "Die Wahhābiten" in Deutsche Morgenländische Gesellschaft, *Zeitschrift*, vol. lxxviii (1924) 176–213; Musil, Alois, *Northern Neǧd*, American Geographical Society, Oriental Explorations and Studies, no. 5 (New York 1928), especially p. 258; Philby, H. St. J. B., *Arabia* (London 1930) ch. ii; Schacht, Joseph, *Der Islam mit Ausschluss des Qor'āns*, Religionsgeschichtliches Lesebuch, vol. xvi (2nd ed. Tubingen 1931) p. 154–58.

MOHAMMEDAN LAW. *See* ISLAMIC LAW.

MOHAMMEDANISM. *See* ISLAM.

MOHEAU, French population theorist of the eighteenth century. Little is known of Moheau's life. It was long believed that the name was merely a pseudonym of the famous philanthropist Montyon, but at present it is generally recognized that Moheau was the secretary of Montyon. Moheau's *Recherches et considérations sur la population de la France* (Paris 1778; new ed. with introduction by R. Gonnard, 1912) is one of the first demographic treatises in French and perhaps the first of a truly scientific character; it is indispensable for students of the social history of France in the eighteenth century. Moheau does not merely record and classify demographic phenomena -a task which he performs carefully and competently; he also interprets them, taking account of their qualitative as well as of their quantitative aspects. A populationist, like most writers of his time, he believed that the wealth of the state depends upon the size of the population and the proportion of workmen in it but adopted a very moderate attitude toward the policy of systematic encouragement of population increase urged by the mercantilists. Twenty years before Malthus he posed with great precision the problem of the relation of population to subsistence; but his conclusion was not as pessimistic as that of Malthus. He apparently took into account to a greater extent than did the latter the effectiveness of repressive and preventive checks, especially the high mortality in a great many trades. He also emphasized voluntary restriction, which, from what he says, seems to have been already well established in his time, although the birth rate was very high. His discussion of the factors which might affect the development of the population is remarkably complete and abounds in penetrating observations and striking formulations.

RENÉ GONNARD

Consult: Gonnard, René, *Histoire des doctrines de la population* (Paris 1923) p. 196-207, and introduction to his edition of *Recherches et considérations . . .*, p. v-xx; Faure, F., *Les précurseurs de la société de statistique de Paris* (Nancy 1909); Labour, F., *M. de Montyon, d'après des documents inédits* (Paris 1880).

MOHL, ROBERT VON (1799–1875), German jurist and political figure. Mohl, a great grandson of J. J. Moser, shares as a jurist the latter's ease of production, range of scientific learning and inclination toward inductive collection and treatment of great masses of material.

His significance as a jurist lies in the fact that with his lucid sense of the actual he finally banished the phantom of a general German territorial public law thus leaving himself free to project in model fashion a particular system of public law, as he did in his *Das Staatsrecht des Königreichs Württemberg* (2 vols., Tübingen 1829–31). His *Die Polizeiwissenschaft nach den Grundsätzen des Rechtstaates* (3 vols., Tübingen 1832–34; 3rd ed. 1866) is a pioneer accomplishment in the field of administrative law despite the antiquated flavor of its title. His *Das Bundes-Staatsrecht der Vereinigten Staaten von Nord-Amerika* (Stuttgart 1824) shows him to have been thoroughly familiar with American federal institutions and to have contributed to both legal and political understanding of them abroad.

As a political figure Mohl occupies in these writings a position which he himself once characterized as that of an English Whig, a Frenchman of the left center and an American Federalist. Mohl took a leading part in the efforts toward creating a German empire. First a member of the German parliament, he was imperial minister of justice in 1848–49, and devoting himself after 1861 entirely to politics he found opportunity both as ambassador from Baden and as president of the audit office in Karlsruhe to bring his liberal ideas to practical realization. From 1874 he was a national liberal delegate in the Reichstag. With complete openness and scientific impartiality Mohl defended his political convictions without regard to the fact that his very début as an attaché of Wangenheim displeased Metternich.

As a political scientist Mohl developed under the influence of Ahrens and Lorenz von Stein the concept of social politics. While he set out from the problem of society, he took this to comprise a doctrine of the means to the attainment of the purposes of the various circles of society as well as the relation of the latter to the state and to the individual. He thus opposed the concept of society to that of the state.

Finally, Mohl's *Die Geschichte und Literatur der Staatswissenschaften* (3 vols., Erlangen 1855–58) is an admirable achievement of vast learning and polyhistoric scholarship, a work which in its monographic treatment of German and foreign writings on public and international law, economics and politics, while in many ways outmoded, remains indispensable in its comprehensive mastery of the material and the revelation of its significance to life.

ERNST VON HIPPEL

Consult: Meier, Ernst, in *Zeitschrift für die gesamte Staatswissenschaft*, vol. xxxiv (1878) 431–528; Stintzing, R. von, and Landsberg, E., *Geschichte der*

deutschen Rechtswissenschaft, 3 vols. (Munich 1880–1910) vol. iii, pt. ii, p. 401–11; Schulze-Gaevernitz, H. von, *Robert von Mohl* (Heidelberg 1886); *Anna von Helmholtz: Ein Lebensbild in Briefen*, ed. by Ellen von Helmholtz von Siemens, 2 vols. (Berlin 1929) vol. i.

MÖHLER, JOHANN ADAM (1796–1838), German Catholic theologian. Möhler was born in Württemberg and taught first at the University of Tübingen, and later at the University of Munich, to which he was summoned through the influence of his friend Döllinger. Möhler's life work was his *Symbolik, oder Darstellung der dogmatischen Gegensätze der Katholiken und Protestanten nach ihren öffentlichen Bekenntnisschriften* (Mainz 1832; 10th ed. by F. X. Kiefl, Regensburg 1921; tr. by J. B. Robertson, 2 vols., London 1843), which presents the first analysis by a Catholic of the dogmas of the various churches from an accurate historical viewpoint; without open polemic, it nevertheless bears the decided mark of the author's ecclesiastical attitude. Through his deliberate accentuation of dogmatic differences he sought to direct the struggle of faiths into objective channels and to promote mutual respect on the part of the churches. In this undertaking he was on the whole successful with regard to Germany; even in the spirited retorts by Protestants which his work called forth (notably those of Baur, Nitsch, Marheineke and later Hase) there is almost unanimous recognition of his high minded attitude, although he is accused of presenting an idealized version of Catholicism and a distorted picture of Protestantism. The permanent value of the *Symbolik* lies in the particularly illuminating and organic exposition of the Catholic ideas animating the various dogmas. Möhler did not develop these ideas rationalistically, like the men of the Enlightenment, or weave them out of pure speculation, as did the romantics; rather he grounded them objectively on historical facts. To this extent he was, next to Döllinger, the initiator of a scientific and historical theology. Möhler's conception of the church was dominated by the idea of unity; more particularly he represented the episcopal rather than the papalist standpoint. He died, however, long before this antithesis became a living political issue.

WOLFRAM VON DEN STEINEN

Other important works: *Die Einheit in der Kirche, oder das Princip des Katholicismus* (Tübingen 1825, 2nd ed. 1843); *Athanasius der Grosse und die Kirche seiner Zeit*, 2 vols. (Mainz 1827; 2nd ed., 1 vol., 1844); *Neue Untersuchungen der Lehrgegensätze zwischen den Katholiken und Protestanten* (Mainz 1834; 5th ed. by P. Schanz, Regensburg 1900); *Gesammelte Schriften und Aufsätze*, ed. by J. Döllinger, 2 vols. (Regensburg 1839–40); *Patrologie*, ed. by F. X. Reithmayr (Regensburg 1840); *Kirchengeschichte*, ed. by P. B. Gams, 4 vols. (Regensburg 1867–70).

Consult: Wörner, Balthasar, *Johann Adam Möhler*, ed. by P. B. Gams (Regensburg 1866); Friedrich, J., *Johann Adam Möhler, der Symboliker* (Munich 1894); Goyau, Georges, *Moehler* (Paris 1905); Vermeil, Edmond, *Jean-Adam Möhler et l'école catholique de Tubingue (1815–1840)* (Paris 1913); Vigener, Fritz, *Drei Gestalten aus dem modernen Katholizismus: Möhler, Diepenbrock, Döllinger*, Historische Zeitschrift, Beiheft, no. 7 (Munich 1926) p. 1–75; Miller, L. F., in *Church Historians*, ed. by Peter Guilday (New York 1926) p. 240–76; Geiselmann, J., "Johann Adam Möhler und die Entwicklung seines Kirchenbegriffs" in *Theologische Quartalschrift*, vol. cxii (1931) 1–91.

MOLESWORTH, SIR WILLIAM (1810–55), British parliamentarian and colonial reformer. Molesworth studied at Edinburgh and Cambridge, traveled on the continent and at the age of twenty-one was elected to Parliament, where he served with only a four-year interruption until his death. During this period of his retirement from politics, 1841–45, he devoted himself to editing the works of Thomas Hobbes. As the friend of Bentham, Mill and Grote, Molesworth launched into the movement for colonial reform, to which his wealth and social position were valuable assets. In 1835 he founded the *London Review* and merged it the following year with the *Westminster Review*, the organ of the philosophical radicals with whom he had aligned himself.

Self-government for the colonies and the destruction of the system of penal transportation were the two chief ends he set out to accomplish, and his well informed and fearless speeches in the House never allowed either issue to be forgotten. Having opposed the transportation of six laborers for trade union conspiracy, he demanded the same treatment for another conspiracy, that of organizing lodges of Orangemen in the army; citing names he called for the indictment of the duke of Cumberland and "the Right Reverend Father in God, Thomas, Lord Bishop of Salisbury" in order to teach them "and other titled criminals that . . . equal justice is now to be administered to the high and to the low." Molesworth lived to see transportation abolished. His brilliant defense of Lord Durham's settlement of the Canadian problem foreshadowed the present British Commonwealth. He protested against the prevailing extravagance in colonial administration, particularly the sums

lavished upon military defense; he died, however, shortly after his appointment as colonial secretary and before he was able to carry into effect his plans for economy.

C. W. EVERETT

Consult: Fawcett, M. G., *Life of the Right Hon. Sir William Molesworth* (London 1901); *Selected Speeches of Sir William Molesworth on Questions Relating to Colonial Policy*, ed. with introduction by H. E. Egerton (London 1903).

MOLINAEUS, CAROLUS. *See* DUMOULIN, CHARLES.

MOLINARI, GUSTAVE DE (1819–1912), Belgian-French economist. Molinari commenced his career as a journalist in Paris. In 1852 he was appointed professor of political economy at the Musée Royal de l'Industrie Belge at Brussels and later taught at the Institut Supérieur du Commerce at Antwerp. After his return to Paris he edited the *Journal des débats* from 1871 to 1876 and the *Journal des économistes* from 1881 to 1909.

Molinari represented the most extreme wing of economic liberalism in France; he consistently reduced all economic and social problems to the fundamental utilitarian principle of maximizing gain and minimizing effort and believed firmly that free competition and the unrestricted play of "natural" forces are the most effective means in the realization of this principle. His conception of the state was even narrower than that of the physiocrats; he denied to the state the right of expropriation, of currency issue, of education, and maintained that its sole function was that of creating and preserving the *milieu libre* in which individual initiative and activity shall flourish. In opposition to the socialist solution of the economic problem, he urged the extension of the corporate form of business organization, which would facilitate the diffusion of private property, and proposed the organization of international labor exchanges, analogous to that of commodity exchanges, which would increase the knowledge of the labor market, assure greater mobility of labor and thus strengthen the bargaining position of labor in the process of wage determination. While Molinari looked upon war as an early expression of the competitive principle, he condemned modern war as a great economic illusion harmful to victor and loser alike. He opposed all forms of protective tariff as relics of a rapidly disappearing order of national self-sufficiency and was prominently associated with the movement for the formation of a customs union of the important European countries in the 1870's and 1880's.

ROGER PICARD

Chief works: *Études économiques* (Paris 1846); *Cours d'économie politique*, 2 vols. (Paris 1855; 2nd ed. Brussels 1863); *Questions d'économie politique et de droit public*, 2 vols. (Paris 1861); *L'évolution économique du dix-neuvième siècle. Théorie du progrès* (Paris 1880); *Le droit de la paix et le droit de la guerre* (Paris 1887); *L'évolution politique et la Révolution* (Paris 1884); *La morale économique* (Paris 1888); *Les bourses du travail* (Paris 1893); *Comment se résoudra la question sociale* (Paris 1896); *Esquisse de l'organisation politique et économique de la société future* (Paris 1899), tr. by P. H. Lee-Warner as *The Society of To-morrow* (London 1904); *Les problèmes du XXe siècle* (Paris 1901); *Économie de l'histoire. Théorie de l'évolution* (Paris 1908).

Consult: Waha, Raymund de, *Die Nationalökonomie in Frankreich* (Stuttgart 1910) p. 72–96; Pirou, Gaëtan, *Les doctrines économiques en France depuis 1870* (Paris 1925) p. 104–10.

MOMMSEN, THEODOR (1817–1903), German historian. The foundations for Mommsen's work as a historian of Rome were laid at Kiel, where between 1838 and 1843 he studied under the historian Droysen, the philologist Jahn and the jurists Burchardi and Osenbrüggen; and during his subsequent travels in France and Italy, which brought him into close contact with the epigrapher Borghesi. Imbued with the liberal ideas of his time he struggled zealously against the conservative forces in German political and social life as well as for the revision of the law and constitution of Schleswig, his native state. In 1848 he became professor at Leipsic, in 1852 at Zurich, in 1854 at Breslau and from 1858 to 1885 at Berlin.

Mommsen's writings, which number 1513 titles varying from brief articles to pioneering compilations or editions and extended treatises, display at the same time untiring zeal for accuracy of detail, felicity of expression and audacity of conception. Surveying and mastering the entire range of sources—literary texts, coins, inscriptions, papyri—he penetrated into every aspect of Roman civilization, political, military, religious, economic, social and literary. The standard *Corpus inscriptionum latinarum* (15 vols., Berlin 1863–1932), a source work of fundamental significance for the social history of the Roman Empire, owes to him not only its inception but in large part its realization. In his *Geschichte des römischen Münzwesens* (Berlin 1860) he indicated the full potentialities for the use of coins in the elucidation of political and

economic problems. The unique combination of juristic and historical knowledge which he brought to the study of Roman law enabled him to make a great advance over the methods of the antiquarian historians of this field. In *Römisches Staatsrecht* (Handbuch der römischen Alterthümer, vols. i–iii, 3 vols., Leipsic 1871–88; vols. i–ii, 3rd ed., 1887) he analyzed exhaustively the public law of Rome; in *Abriss des römischen Staatsrechts* (Systematisches Handbuch der deutschen Rechtswissenschaft, sect. i, vol. iii, Leipsic 1893; 2nd ed. 1907) he delineated its historical evolution. The *Römisches Strafrecht* (Systematisches Handbuch der deutschen Rechtswissenschaft, sect. i, vol. iv, Leipsic 1899), which he published at the age of eighty-three, constitutes a definitive treatment of the nature and limits of Roman criminal law. Besides these systematic treatises he provided an invaluable guide for future investigators by his reeditions of the Roman law books. His comprehensive although incomplete *Römische Geschichte* (vols. i–iii, v Berlin 1854–56; vols. i–iii 13th ed., vol. v 10th ed., 1922–27; tr. by W. P. Dickson as *The Provinces of the Roman Empire*, 2 vols., 2nd ed. London 1909), which consists of three volumes dealing with the history of the Roman Republic from the beginning until the time of Caesar and an additional volume on the Roman provinces, laid under contribution all the varied facets of his knowledge and personality; and in his warm portrayal of the life of the people his bias toward political liberalism is clearly manifest.

The sober realism of Mommsen's exposition, in which deductive and inductive methods were subtly combined, superseded all previous approaches—those of the classicists, the romanticists and the antiquarians. Scholars in many branches of science were powerfully influenced by his restless creativeness, his methods of using the sources to reconstruct the civilization of a people, his genius for organizing scholarly enterprises, his mastery of two distinct disciplines and his literary sense. He became one of the greatest figures in nineteenth century scholarship and the potentialities of his influence are still far from exhausted.

WILHELM WEBER

Consult: Hartmann, L. M., *Theodor Mommsen* (Gotha 1908); Weber, W., *Theodor Mommsen* (Stuttgart 1929); Fueter, Eduard, *Geschichte der neueren Historiographie*, Handbuch der mittelalterlichen neueren Geschichte, vol. i (2nd ed. Munich 1925) p. 549–56; Gooch, G. P., *History and Historians in the Nineteenth Century* (2nd ed. London 1920) p. 454–65; Fowler, W. W., "Theodor Mommsen: His Life and Works" in *Roman Essays and Interpretation* (Oxford 1920) p. 250–68; Neumann, K. J., in *Historische Zeitschrift*, vol. xcii (1904) 193–238; Gradenwitz, Otto, in *Zeitschrift der Savigny-Stiftung für Rechtsgeschichte, Romanistische Abteilung*, vol. xxv (1904) 1–31.

MONARCHOMACHS. The monarchomachs were a group of writers of various creeds and nationalities who, during the wars of religion in the sixteenth century, denied that the prince had a title to unlimited obedience from his subjects. Their object was twofold in nature. On the one hand, they were seeking a way of defending their particular religious faith from persecution; this emphasis was for the most part Protestant in character. On the other, they argued that the prince does not hold his power directly of God, but indirectly through the medium of the people. They therefore upheld, although in differing degrees, the doctrine of popular sovereignty.

The list of writers who may be included among the monarchomachs is a notable one. Ponet and Goodman in England, Buchanan in Scotland, Beza in Geneva, Duplessis-Mornay (Philippe de Mornay, seigneur du Plessis-Marly), Hotman and Doneau in France, are the most famous Protestant writers; but the two well known collections of pamphlets, the *Mémoires de l'état sous Charles IX* (3 vols., Paris 1578–79) and the similar series for Henry III, contain important material. On the Catholic side the best French writers are Louis d'Orléans, Boucher and Rossaeus, although the identity of the last named is not certain and he may be either the Frenchman Rose, bishop of Senlis, or the Englishman Reynolds; in England the work of Robert Parsons partakes in part of this school and in part of the Jesuit doctrine. Much material of interest will be found in the *Mémoires de la Ligue* (best ed., 6 vols., Amsterdam 1758), which reprints fugitive documents and pamphlets.

In each case the views of the monarchomachs were derived, even when translated into a general system, from a special environment of persecution and conflict. In England the Marian persecution, in Scotland the struggle between Knox and Mary Stuart, in France the alternating fortunes of some forty years of civil war, were responsible for their doctrines. None of them had any genuine interest in either toleration or liberty as such; all of them, unintentionally, served both those ends by the radicalism to which their situation drove them. The real root of their doctrine was less an interest in secular problems than a passionate attachment

to some given faith—the need therefore to discover a foundation in civil politics upon which its title to security might be based.

Among the cardinal features of the political philosophy characteristic of most of the monarchomachs is the doctrine of an inherent right to resist a command given by the prince, when it is contrary to the law of God. Some but not all of the Protestants deny a right of resistance in the common people and make action by the latter dependent upon a call from the nobility or the magistrates of the realm. Most frequently the monarchomachs make contract the basis of the state. The character of the contract of course differs with each writer. It is sometimes a single one in which the prince promises to act beneficently toward his subject; in this case persecution is conceived as a breach of the contract, involving a right of rebellion. Sometimes, as with the *Vindiciae contra tyrannos* (written probably by Duplessis-Mornay, Basel 1579), it is a dual contract, in which the people is pledged on the one hand to God and on the other, but secondarily, to the prince; where the latter commands that which is contrary to the will of God or, for example, massacres Protestants on St. Bartholomew's Day, the superior obligation to God takes precedence over the contractual obligation to the prince, and the latter may be resisted. The monarchomachs all preached a doctrine of natural law. Above positive law there exists a body of principles with which the former must be in accord. Where it does not so conform, there is under appropriate circumstances a duty of resistance. The monarchomachs therefore refused to accept the view of law, increasingly widespread in the sixteenth century, as a command which must be obeyed because of the source from which it emanates. They moved from the passive obedience preached by Tyndale, through the passive resistance finally condoned by Calvin, to the active resistance increasingly urged after the great French massacre.

A difference of some significance between the Protestant and Catholic schools may be noted. The Protestants, broadly speaking, preached their doctrine of contingent resistance until the accession of Henry IV of France, when the possibility of toleration, should he prove victorious, tempted them to abandon their former position for either the doctrine of the *Politiques* or a reaffirmation of indefeasible hereditary right under divine sanction. It is at this point that the Catholic writers take up the tale. Horrified at the prospect of a heretical monarch, deeply involved in the activities of the League and in Spanish intrigues or, as in England, antagonized by the persecutions of Elizabeth, they insist that sovereign power belongs to the people, who delegate it by contract to the prince; where the latter does not fulfil the necessary conditions of good government, the contract may be broken, whereupon sovereignty reverts to the people, who may choose a new ruler. Perhaps the clearest form in which the Catholic view appears is in Rossaeus' *De justa reipublicae christianae* (Antwerp 1592). The right of the king, he argues, is limited by the purpose of the state. This is to provide the security, freedom and virtue of the subject; interference with any of these contradicts the end of the state, and the rule of the prince may be terminated by the right of rebellion. Virtue is the condition upon which liberty and security depend. But there can be no virtue without religion, and religion must mean the one true religion, which is the Catholic. Hence no non-Catholic king, for example Henry IV, is legally the rightful monarch; and no toleration of heresy is permissible since it tolerates that which, being untrue religion, cuts off from the state the support upon which the practise of virtue depends.

The pedigree and filiations of the doctrine are long. Historically it goes back to the general principles of mediaeval political thought, to contract theories like that of Manegold of Lautenbach, and especially to the revolutionary discussions of the conciliar movement. It looks forward to the characteristic doctrines of the Jesuits and in part at least through them to that Whig philosophy of the seventeenth century which received its supreme expression in Locke. It is of course closely connected with the literature of the Dutch rebellion, and hence may be said to have had a direct and important influence on schools of thought so divergent as those associated with the names of Althusius and Grotius.

HAROLD J. LASKI

See: OBEDIENCE, POLITICAL; RELIGIOUS FREEDOM; SOCIAL CONTRACT; NATURAL LAW; REPRESENTATION.

Consult: Allen, J. W., *A History of Political Thought in the Sixteenth Century* (London 1928) p. 302–42; Figgis, J. N., *Studies of Political Thought from Gerson to Grotius* (2nd ed. Cambridge, Eng. 1916) ch. v; Laski, H. J., Introduction to his edition of *Vindiciae contra tyrannos* with title *A Defence of Liberty against Tyrants* (London 1924); Labitte, Charles, *De la démocratie chez les prédicateurs de la Ligue* (2nd ed. Paris 1865); Weill, G. J., *Les théories sur le pouvoir royal en France pendant les guerres de religion* (Paris 1892); Treumann, R., *Die Monarchomachen*, Staats- und völkerrechtliche Abhandlungen, vol. i, no. i (Leipsic 1895).

MONARCHY, at least in its highly specialized modern connotation, is a far cry from the one-man rule which the Greek word originally signified. Broadly speaking it designates a peculiar type of constitutional legitimacy founded upon the pure blood of the monarch, who, no matter how limited may be the extent of his governing functions, is thereby enabled to represent the organic unity of the people. The monarch is the symbol of the living growth of a unified culture pattern of which the constitutional order is but an aspect. What made France a monarchy in the time of Richelieu was not the rule of one man—Richelieu—but the fact that there existed a hereditary king from whom he derived his authority and legitimate powers. Although it is difficult to reach a final judgment regarding the frequently advanced thesis that the need for a living symbol of unity is a correlate of monotheistic religion, it is not unreasonable to suppose that the apparent preference of the Holy Scriptures for monarchical government exerted a profound influence on the European mind. The highly individual Christian ethic cannot, however, accept as the final criterion so heathen a conception as blood legitimacy; political philosophers from St. Augustine to Treitschke have therefore expounded ethical standards whereby monarchy might be distinguished from tyranny. Plato and Aristotle no less than the New Testament offer explicit grounds for such distinctions; according to "the" philosopher only the man of transcendent virtue should be made monarch, while according to *Romans* (XIII: 1–6) the ruler is the servant of God. Important as these distinctions were for the development of a limited constitutional monarchy, they have nevertheless served to emphasize rather than to weaken the conception of blood legitimacy as a symbolic representation of unity.

Since these particular conceptual associations which have grown up around the institution of monarchy in the course of western European development cannot safely be transferred to the political systems of other cultures, political science stands in need of a generic concept, more nearly approximating the value of the original Greek *monarchia*, to designate one-man rule, whether it be monarchy, tyranny, despotism or dictatorship. Max Weber has suggested "monocracy." A general hypothesis may be advanced for the development of monocratic rule: it appears whenever a group of human beings is engaged in serious struggle for survival. The chances for such monocratic rule are as much enhanced by dissensions within the group as by the attacks of external enemies or by natural catastrophes like floods. More recently the "crises" characteristic of our industrial society have proved a powerful contributing cause. The highly technical nature of many of these emergencies explains why the rise of monocratic rule is closely associated with the process of bureaucratization, which implies a hierarchy.

Monocratic rule and not monarchy is frequently meant when anthropologists discuss one-man rule among primitives. It prevails, or prevailed before the European conquest, in Polynesia, Africa and Peru. The economic, political, judicial and priestly functions and prerogatives of these kings, or monocrats, differ widely even within the same culture area. Such monocrats are as a rule regarded as of divine origin and their acts are invested with divine sanction; Hocart has claimed that the worship of kings is one of the earliest forms of religion. Sometimes, as in Polynesia, the nobility circumscribed the power of their kings rather carefully, so that effective monocracy disappeared. In Africa, on the other hand, kings assisted by a hierarchically graded officialdom exercised unquestionably monocratic power. Great as are the variations in detail of these monocratic political structures, they show that military leadership and judicial functions are to a greater or lesser degree concomitants of the rule of tribal chiefs in primitive culture areas. But since some groups have hereditary and others elective systems, it cannot be stated with certainty that some of the latter should not be classified as republics rather than as monarchies.

The succession of great empires in Asia Minor and north Africa from the Egyptian down to the Persian as well as the corresponding developments in India and China offers a variegated panorama of monocratic rule as the ever recurring form of governmental organization within the most diverse culture patterns. Although lack of reliable information precludes a definitive set of conclusions, it is unquestionably true that these empires turned the scale in favor of monocratic rule as the usual form of governing extensive territorial dominions in historic times.

The Greek tribes were originally governed by traditional monocrats. Divinely descended chiefs, subject in various ways to the wishes of tribal elders, performed the threefold function of general, priest and judge. However insecure the succession, the Homeric order was based on the recognition of blood legitimacy. In war-

like Sparta the hereditary kings as wartime commanders retained their importance despite the rigorous supervision of the ephors. Elsewhere the nobility succeeded in destroying monarchy, usually reducing the kingship to an elective priestly office. In historic Greece oligarchy and democracy were the alternative political forms. Although class warfare and barbarian inroads occasionally necessitated the concentration of power in the hands of a single individual, such monocratic rule was stigmatized as tyranny; and the tyrants, whose strength lay only in their personal prowess, were uniformly unsuccessful in transforming their usurped power into a permanently hereditable legitimacy. It may be noted in passing, however, that the emergence of these monocratic rulers on the outer fringes of Greek culture affords a striking verification of the fundamental hypothesis that external pressure tends to produce monocratic rule.

It is difficult to say whether these factors were responsible also for the maintenance of the traditional monarchy in Macedon, from which was to spring the brilliant monocratic regime of Alexander and his successors throughout the Hellenistic period. The grosser aspects of monocratic rule were for a time hidden from many of the prouder city-states by calling it "suzerainty." But as the suzerains succeeded in setting up local tyrants, the freedom of the cities became a shadow; and the great Macedonian dynasties remained unshaken down to the Roman conquest. Hellenistic history is largely dynastic history, exhibiting all the incidents of marital alliance, cabal and murder which so often accompany the recognition of blood legitimacy. Kings were generally deified, but outside of Asia proper such deification came only very gradually to inspire genuinely religious enthusiasm. The spread of pantheistic stoicism helped this development considerably.

The primary importance of the Hellenistic regime lies in the fact that the Macedonian monarchies served as a pattern for the Roman development. "The Roman Empire was born in the Eastern Mediterranean . . . ," writes Ernest Barker in *The Conception of Empire*; "We may almost say that it was Oriental in its origin: we may at any rate affirm that it was Hellenistic; and Hellenistic means the fusion of Greek and Oriental." But while the ideological pattern of the empire was Hellenistic, there can be little doubt that the factual causes of monocratic rule were also present. The internecine strife which characterizes the century of Roman history after the agrarian upheavals under the Gracchi became increasingly intolerable in the age of proscriptions. The growing inadequacy of the authorities under the republican constitution, particularly of the Senate, in administering the outlying dominions of the empire was made apparent by the tremendous frauds and corruptions of colonial governors. Although in his first abortive attempt to usurp monocratic authority Julius Caesar paid formal homage to the republican tradition by resting his dictatorial powers upon a specially enacted law, the power conferred by that law was unlimited and constituent (*dictatura legibus scribendis et reipublicae constituendae*). On the other hand, Octavianus, who as triumvir had wielded similar constituent power, returned all this power to the people and the Senate on January 13, 27 B.C. In turn he became *princeps* and *Augustus*. Thus the outward forms of a republican constitution were preserved while an almost unlimited monocratic rule was established in fact, although it was temporarily held in check by the power of the Senate. Mommsen has characterized this system as diarchy. It follows that the ruling power of the principate does not simply mark the end of the constitutional period and the beginning of absolutism, but rather an endeavor to reestablish constitutional rule and to bring to a conclusion the period of absolute rule under dictators and triumvirates. Yet it amounts to an implicit recognition of the need for monocracy. This diarchic system consequently did not succeed for long. The continued pressure of outside enemies and internal dissensions continued to operate in the direction of monocratic rule of the most absolute sort; when in the third century Diocletian openly legalized such rule, he was merely stating in law what had long been a fact.

This change in the status of the emperor may be considered a reflection of a fundamental transformation in all conceptions of life and the universe in that period. For the Greek and the Roman of the classical and postclassical period the state was the central focus of life; religion was one of its aspects. The state might be a city worshiping its particular god or an empire worshiping a deified emperor as the incarnate symbol of its sway. In either case the dominant thought was secular; it was of this world. By the third century A.D. a profound change had taken place. The life hereafter became the dominant interest of human existence. For many centuries the basis of community was religious in the peculiar sense which religion must acquire

when it stresses dogmatic conceptions of otherworldly salvation. Moreover a monotheistic conception of the deity conceived of in equally explicit dogmatic terms was associated with this religion. In a world dominated by such a faith monocratic rule was bound to become a matter of course, partly because it is the simplest expedient of maintaining order and partly because it corresponds to that intense feeling for unity which also expresses itself in a monotheistic cosmology. But it was only the Eastern Roman Empire which could preserve this heritage, until the last Byzantine emperors handed it on to the Russian czar, through whom it continued until 1917 to mold the destinies of European civilization.

In the west a new pattern of life caused monocratic rule to develop in a different direction. After the Western Empire had been destroyed by the migrating Germanic tribes, the Roman bishop kept alive the idea of universal empire through his insistence upon the unity of Christendom as organized in the church of which he was the head. On the other hand, the Germanic tribes, like many other primitive groups, had kings whose main function was to lead the tribe in battle, while in times of peace all free men acted in common. Under the influence of the continuous fighting during the period of migrations the king's position showed a more decided tendency to become genuinely monocratic. Moreover in the former Roman provinces, like Gaul and Britain, the Roman provincials accepted the king as lord (*dominus*); but they were not received into the Germanic community of freemen and thus the tribal kinsmen became a kind of upper caste. There has been a great deal of learned controversy with regard to the intertwining of Germanic and Roman institutions in this period of confusion, but it cannot be doubted that the two were amalgamated in varying degrees. The most curious blending, which permanently affected the European conception of monarchy for centuries to come, occurred when the Roman bishops urged the Frankish king Charles to accept the imperial Roman crown at the hands of the pope (800 A.D.). The occasion was a temporary vacancy on the imperial throne of Byzantium; Charles' halting consent to the proposal foreshadowed the conflicts which were inherent in this dualism of universal priesthood and universal empire. Although this first attempt to reestablish the Roman Empire proved unsuccessful, the inner necessity of the idea which it embodied was shown by the more lasting revival under Otto the Great in 962 A.D. The contrast between the imperial office and Germanic kingship has been well summarized by Bryce: "No two systems can be more unlike than those whose headship became thus vested in one person: the one centralized, the other local; the one resting on a sublime theory, the other the rude offspring of anarchy; the one gathering all power into the hands of an irresponsible monarch, the other limiting his rights and authorizing resistance to his commands; the one demanding the equality of all Christians as creatures equal before Heaven, the other bound up with an aristocracy the proudest, and in its gradations of rank the most exact, that Europe had ever seen."

Although the revival of the empire under Otto was intimately related to the colonization and Christianization of the Slavic east, this objective was almost entirely lost sight of in the days of the struggle over the investiture of bishops and of the crusades which followed it. The cultural pride and the growing wealth of the Italian people in the twelfth and thirteenth centuries asserted themselves against the "barbaric" north in the aspirations of the pope and the Roman "hierarchy" to universal empire through universal priesthood. The presumed holiness of the empire seemed to lend color to their claim to sit in judgment over the acts of emperors and kings. But no sooner had imperial unity been effectively destroyed than the papal authority itself collapsed, and the imperial pretensions were claimed by kings and cities alike. The answer to Boniface VIII's bull *Unam sanctam* was the Babylonian captivity of Avignon. Henceforth Europe moved toward the modern system of a balanced group of national states, and monarchy assumed its new role of integrating the several linguistic culture areas in terms of the respective organic unity of a people or nation.

The sixteenth and seventeenth centuries saw a notable intensification of the monarchical principle everywhere in Europe, because of the opportunity it offered for the strengthening of monocratic control. In times of transition and confusion the need for a vigorous centralization of command is always most keenly felt; and the religious wars following the Reformation were threatening to reduce Europe to political chaos, while the Turkish attacks strained Austria's strength to the breaking point. In such troubled times rigorous efficiency was an absolute prerequisite of survival. This threw unusual importance on the monarch, who alone of the existing

authorities was in a position to forge the territorial state into an effective instrument of power. Religious dissension, especially in Protestant countries, had weakened the church as an independent and comparatively neutral arbiter. The estates, parliaments and other such authorities of the mediaeval constitutional state were even less effective under the new conditions. Their corporate organization precluded prompt and vigorous action; their vested interests in the maintenance of feudal privileges dulled their reformatory initiative; and their influence was diminished by the fact that they had arisen in connection with the ancient tribal units, which ordinarily had no more than a provincial importance within the more comprehensive territorial or national state. Alone among the institutions of the mediaeval order the kingship was capable of development to suit the contemporary needs. To be sure, two countries on the periphery of European culture, England and Sweden, fairly compact in Protestant sentiment and sufficiently aloof to be secure from the military interventions of neighbors, succeeded in maintaining and developing their corporate organization; but the attempt to do likewise in Poland spelled national disaster.

The need for strong central action led to an extensive development in political theory of the concepts of the *plenitudo potestatis* and of sovereignty. The absolutist conception of the sovereign as the source of all law received its culminating expression in Hobbes and Spinoza, although the less uncompromising views of Bodin and Grotius were more influential. In practise there was no systematic attempt by the king to supersede all existing authorities, but merely to supplement them where necessary. This was accomplished through the use of commissioners, royal agents possessing no independent legal competence but acting solely in the name of the king. Integrated by their mutual dependence on the monarch, they formed the basis for a centralized royal administration. Motivated primarily by the desire to secure domestic tranquillity and military efficiency, these officials, of whom the French intendants were typical, soon assumed wide administrative tasks. Regular revenues being indispensable, they undertook financial administration and even, most notably in Prussia, made systematic attempts to foster the general prosperity on which revenues ultimately depend. Administrative needs often necessitated royal decrees, but the traditional judicial authorities were usually retained. Thus the monarch, although subject to various traditional limitations in his legislative and, more particularly, judicial authority, ultimately became the center of a strong and independent bureaucratic machine suited to the administrative needs of the modern state. Kings were in the process of becoming thoroughgoing monocrats.

As the creator and guarantor of national institutions the king was strong in popular favor, especially among the commercial classes, which primarily desired ordered peace and freedom from feudal restrictions. The position of the royal court as a focus for the intellectual and artistic expression of the age helped to forge the nation into a cultural unity. Thus the traditional veneration of the monarchy, to which some new religious sanctions were now added—although the theory of divine right was not widely accepted—was reenforced by gratitude for present services. Mediaeval constitutionalism, at first vigorously supported by the monarchomachs, received in the eighteenth century dwindling and, save for Montesquieu, undistinguished intellectual support, while the *Fronde* demonstrated the practical impotence of its interested adherents. The absolutist monarchy, to be sure, displayed weaknesses. Since the concentration of political power in the king made exacting demands on his personal ability and industry, alternations of disintegration and reform necessarily accompanied the hazards of the royal succession. Yet the eighteenth century produced numerous dutiful and able monarchs. The general acceptability of the system is reflected in the fact that men like Voltaire and the physiocrats, accepting monarchy as the traditional instrument of reform, trusted solely in enlightened despotism for the attainment of their social ideals.

England, Scotland and Sweden stood apart from this continental development. Primarily because of their compactness and isolation mediaeval England and Sweden had developed unusually centralized administrative and parliamentary institutions. Although the anarchy of the War of the Roses called forth the Tudor absolutism, it also eliminated many feudal abuses and, by the virtual annihilation of the old nobility, left Parliament in the hands of the middle classes. Hence revolutionary absolutism was less necessary here than on the continent, and the Tudor sovereigns were able to rule largely through constitutional forms. The pedantic absolutism of the Stuarts, being superfluous, was

successfully resisted by the strongly organized constitutionalists representing the rising commercial classes. The Revolution of 1688 finally established the supremacy of Parliament, thus laying the foundations for an early development of constitutional monarchy.

In Sweden, on the other hand, the nobility never succeeded in gaining ascendancy over the peasants, and thus the ancient Germanic community of freemen remained intact. This was impressively shown by the rise of a commoner, Gustavus Vasa, to the kingship. Although a drift toward absolutism is discernible under his successors until the time of Gustavus Adolphus, after that king's untimely death his gifted chancellor Oxenstierna undertook to rule with the support of the parliament (Riksdag) and thus initiated the period of extreme parliamentary government (*frihetstiden*), which carried over after only a brief interlude into the modern constitutional period.

While the English example later exerted a profound influence, it did not immediately retard absolutist development on the continent. France was the rock on which absolutism was to founder. The peculiar relation of the French monarchy to its hereditary enemy, the nobility, largely accounts for its ultimate failure. Elsewhere, as in Prussia, the king effected national reorganization with the aid of devoted middle class bureaucrats, while the nobles were relegated to the seclusion of their estates. It was thus possible for the royal administration to remain fairly responsive to the reformatory needs of the rising commercial classes. In France, however, the nobles were transformed into courtiers and themselves pressed into the service of the national state. This intrenchment of vested feudal interests in the new order served to neutralize the reformatory efforts of weaker kings. Monarchy stagnated, and when royal extravagance and inefficiency finally produced national bankruptcy, the newly discontented middle classes reluctantly looked elsewhere for the completion of the rational reorganization of the national state. This was accomplished in the course of a series of republican experiments ending in the revolutionary dictatorship of Napoleon.

However special its immediate causes, the French Revolution marks a turning point in the history of monarchy. Henceforward the tendency was to transfer active political functions to popular representatives. The lasting success of the American Revolution, combined with the democratic fervor communicated by the theorists of France, encouraged attempts to satisfy political needs through representative institutions. The democratization and later the industrialization of the masses brought into prominence classes ever less appreciative of tradition. Concurrently monarchy itself became less effective as revolution frightened monarchs into an inappropriate conservatism. Nor could it in any case have long remained adequate, for the growing complexity of modern social and military organization now required the technical genius of a Napoleon rather than the astuteness of a Henry IV. But the retreat from absolutism was gradual. The usual course was for the monarch, by a theoretically free exercise of that *plenitudo potestatis* which he still claimed, to grant a constitution based, if not in theory, at least in fact on a supposedly English separation of powers between the king-executive and the popular legislature. Since the position of the cabinet in England was not understood, the problem of ministerial responsibility was not settled. Some countries, like France, rapidly developed on English lines toward the assumption of real executive power by a cabinet dependent on parliament. In others, like Prussia, ministers remained responsible to the king, the separation of powers thus becoming a temporary bulwark of royal executive authority. But even Germany ultimately reflected the universal tendency toward the assertion of parliamentary ascendancy.

Although consciously on the defensive, monarchy generally persisted in these constitutional forms until the World War. The two Napoleons, as mere party leaders, naturally failed to perpetuate revolutionary dictatorship as traditional monarchy. Yet the ancient monarchies survived the loss of their active powers because of their value as a symbolical embodiment of the national unity. Being historically identified with the glorious past on which the national consciousness is based, the king serves by his mere presence, like a flag, as an emotional focal point for the national energies, a fact well expressed by de Maistre. Above all parties, the king acts, to use Constant's phrase, as a neutral power. Such an arbitral function is exercised when the English or the Belgian king supervises the selection of a new government in a cabinet crisis. The official duties of modern kings are usually greatly restricted, although their personal influence has often been considerable, especially in foreign affairs. But monarchy justified solely by its capacity to inspire sentiment is somewhat fragile, especially in an age which is too transitional to

have a strong feeling for tradition. To avoid apparent partisanship is a delicate task, especially as class tensions increase; and yet the fate of the defeated monarchies after the World War shows how dangerous it is to identify oneself with unsuccessful policies. Monarchies are gradually disappearing, nor do efforts at monarchical restoration seem generally promising. This tendency may, however, be reversed, if the present drift toward monocratic rule in the form of dictatorship continues. As in the days of Augustus, monarchical restoration by providing executive leadership may come to be looked upon as the most promising method of reestablishing constitutional government.

CARL JOACHIM FRIEDRICH
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See: GOVERNMENT; ABSOLUTISM; AUTOCRACY; TYRANNY; DICTATORSHIP; EMPIRE; HOLY ROMAN EMPIRE; RELIGIOUS INSTITUTIONS; TRADITIONALISM; DIVINE RIGHT OF KINGS; MONARCHOMACHS; CONSTITUTIONALISM; DEMOCRACY; REPUBLICANISM; ABDICATION; ACTION FRANÇAISE.

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MONASTICISM. Christian monasticism is an outgrowth of the ascetic ideal implicit in the religion of Christianity and is the expression of a desire for self-surrender and renunciation. This instinct of human nature is revealed also in Buddhism, especially in Tibet (*see* BUDDHISM, section on INSTITUTIONAL ORGANIZATION), and among the fakirs and dervishes of Islam. The institution of monasticism in all its forms has, however, nowhere developed to such a degree as in Christianity. Certain pre-Christian expressions, especially among the Jews, may have had considerable influence on Christian development. Among the Jews of Alexandria and Egypt the principles of monasticism seem to have been fully formulated at the dawn of the Christian era. *De vita contemplativa*, probably written by Philo, tells of a sect of Jews near Alexandria, called *therapeutai*, or devotees, who were accustomed to retire to the hills south of Lake Mareotis, where they led a "philosophical" life of poverty, chastity, meditation and labor.

Better known than this sect was that of the Essenes. These Jewish ascetics, whose center was near the Dead Sea, based their way of life on the old gnostic idea of the malignity of matter. As part of their struggle to avoid pollution they indulged in frequent bathings, rejected animal food, wine and warm baths and wore linen rather than wool because of its higher ceremonial purity. Their ideal was a seminomad corporate life with entire community of goods and unconditional obedience to the head. They accepted marriage, otherwise regarded as an abomination, as needful for the preservation of the race. But at best woman was a mere instrument of temptation. One part of their discipline consisted, as later with the Benedictines, in manual labor.

The rise of Christian monasticism coincided broadly with the adoption by Constantine of Christianity as the official religion of the empire and with the resulting worldliness of the church. Against this lowered ideal monasticism was a protest, a return to ancient simplicity and purity and an emulation of the poverty of Christ. Of necessity this return was not to a new ideal in the church itself or even alongside the church, nor did men seek for it in the apocalyptic visions of earlier days; it lay above, and even in a sense outside, the church. Although monasticism is often viewed as one of the most formidable weapons which the church possessed, it is important to point out this opposition between the church and the monastic ideal. The church has never yet directly founded a religious order; in every case the orders have been the outcome of individual enthusiasm. Moreover monasticism

has never attempted to reform the church and still less the state, with the one exception of the Cluniac movement (*q.v.*). Monasticism has always been too individualistic, too much outside the church, to attempt any reform except of itself. Another consequence of the distinctness of monasticism from the church is of the utmost importance. In its origin monasticism was the protest of the lay spirit against any conception of religion which excluded the laity from the supreme obligations or from the attainment of holiness. Until the end of the fifth century the monk was generally regarded as a layman; in fact the rise of monasticism was a reaction to the establishment by Cyprian of the Catholic church upon a sacramental sacerdotal basis. As a priest the monk had no place higher than his brethren. Personal holiness was regarded in the cloisters as something too high for any apostolic succession to bestow. But the antagonism between the ideal of the cleric and the monk could not last. Largely through the greater worldliness of the Arians, who set to work to persecute monasticism, in part because the influence of Athanasius was thrown on the other side, monasticism became identified with orthodoxy, especially in Egypt. More important still was the support given to monasticism by all the great leaders of the church. In the West, where the consciousness of opposition between the cleric and the monk never became so pronounced as in the East, the influence of Jerome and Augustine on its behalf was decisive.

In the East the dominating principle of monachism was its strongly marked individualism—the protest of the individual against a collectivism which tended to lose sight of his value. Unfortunately the protest became a council of despair and flight, although the element of life which underlay it must not be overlooked. Individualism was self-surrender united in a yearning for ideals which took the form of a flight to the desert. To some extent the reason for this was that the early eastern monks were recruited chiefly from the great cities and not from the villages or from the slave class. Christianity in the fourth century was still mostly centered in the towns, and nowhere was life so hopelessly corrupt and the financial oppression of the middle classes so crushing. This explains the rise in Egypt of the eremite. The influence of stoicism and gnosticism was also significant. The stoics recognized monasticism as the attainment of the ideal of *apatheia*, or the perfect domination of all the influences of nature. In the East gnosticism had been the great foe against which Christianity had fought for its life. In the theological sense it had been defeated, but in the popular life of the church gnosticism changed its name and triumphed in the more exaggerated forms of monachism. In the West, when St. Augustine succeeded in shaking off a restatement of gnosticism called Manichaeism, gnosticism never secured more than a temporary hold, except in the later rise of the Cathari or Albigenses; but in the East a defeated gnosticism found refuge in a monachism modeled after its own pattern. Hence the monstrous austerities, for instance of the stylites, or pillar saints, of Syria, and of the *boskoi*, or grazing monks, of Mesopotamia. But the gnostic ideals which so influenced the eastern hermits had little influence in the West. The disdain of the brooding East for the facts of life was an impossibility for the West, upon which Rome had stamped its genius for organization. In the East the dervish still remains the ideal of the renunciant, whether in the Christian, Moslem or Buddhist world. In the West such monks as St. Gregory or St. Bernard are the interpreters of a different ideal.

Eastern monasticism, which began with the hermits of the desert Nitria—the leading spirit among whom was Anthony (died *c.* 356)—soon developed under the influence of Pachomius (died *c.* 346) into a more organized form. Whether Pachomius owed anything to the monks of the great heathen Serapeum is more than doubtful. But after some years as an anchorite he began with three disciples and gathered the hermits of the Thebaid into a congregation of nine monasteries at Tabennisi near Denderah, while his sister Mary organized two cloisters for women, the number of which soon increased to a dozen. Of equal importance was the development in Syria under Basil of Caesarea (*c.* 329–79), who, after withdrawing for a while under the influence of Eustathius of Sebaste to a solitude in Pontus, escaped extravagances and drew up a rule which became basic to Greek and Russian monasticism. It should be noted, however, that this rule did not lead to any social developments but rather found its best expression, altogether static and contemplative, in the collection of unrelated, often inaccessible, monasteries in such places as Mount Athos. The monasticism of the Eastern church, untouched by the influence of Benedict, has to this day remained much as it was in the early centuries and still lies outside the church.

In the West monasticism very soon ceased to

be the monachism of the lonely monk. It took a tribal form in Ireland, with the chief of the tribe or sept as the abbot. Women and children were at first not driven from the monastery, and all individuals in the clan were reckoned as members; "saintship" was practically hereditary. Celtic monasticism failed, however, to emphasize one of the main features of monasticism—stability, the fixed domicile of the monk; and Irish restlessness led to great missionary activities in Gaul, Scotland and northern England, as well as in such remote places as St. Gallen in Switzerland. Organized upon the sept and not upon the diocese, it recognized only the bishop as subordinate to the abbot. In the blood and fire of the Danish invasions Celtic monasticism died away. Its libraries were burned, its educational agencies ruined, and such monasteries as survived became the center of fierce tribal feuds.

Western monasticism in its abiding form was the result of the work of Benedict of Nursia, who about 529 promulgated his famous Rule for the few companions who had gone with him to Monte Cassino. The success of the Rule was not due to any startling novelty. Its virtues were the familiar ones of abstinence, silence, humility and obedience. Chastity was taken for granted and was not even mentioned. A fundamental law was the absolute community of all property. The duties were worship, reading and manual labor—all of them familiar in the precepts of Benedict's predecessor. Benedict's Rule in fact shows a familiarity with the rules of Cassianus of Marseille (*c.* 360–*c.* 435), Pachomius and Basil and also that of Schenoudi. Its genius lies in the way in which it incorporates into one organic whole the successes and failures which had preceded it and in accommodating monasticism to European conditions. It is instinct with the Roman genius for organization and solidarity. It was a transition from the uncertain and vague to the reign of law. Instead of lawless individualism and vagrancy it substituted a settled self-sufficient community based on cooperative labor. Henceforth the monk was tied down to a domicile of which the abbot was the father. Hitherto monasticism had dwelt chiefly upon self-conquest; Benedict spoke rather of self-surrender. Instead of reducing food, drink and sleep to a minimum Benedict took care that there was a sufficiency and provided also for warmth and cleanliness. In place of individualism in worship he instituted the familiar common worship and canonical hours.

The social results of Benedict's Rule were incalculable. Previously labor had been looked upon as reserved for slaves, although it is true that Pachomius organized his monasteries on the basis of trades. But Benedict made systematic labor the foundation of his monastic life. Six hours a day were to be devoted to manual toil by each monk. The desert was turned into fertile fields, and the monastery became a center around which there later grew a town. For several centuries Europe witnessed the spectacle of organized monasteries where the individual profited little and the community gained all. Nor was it by accident that the first monk to ascend the papal throne, Gregory the Great, was the real founder of the church's missionary activities. For three hundred years after Gregory the gospel was carried to the lands of the heathen by monks and new monasteries, a religious colonization which brought with it vast social and economic consequences. From the first these missionary colonists looked for support to the papacy rather than to the metropolitans of settled lands. St. Augustine in England, Boniface in Germany, thus helped to found the authority of Rome.

The close connection which for so many centuries existed between the Benedictines and learning was really due to a contemporary of Benedict, Cassiodorus (died *c.* 580), who endowed the monastery of Vivarium with his own fine library and trained monks to transcribe manuscripts. Cassiodorus must be credited with showing the new monasteries the way to preserve and disseminate such learning and culture as had survived. From the eighth to the eleventh century, especially after the decay of Irish Christianity, the Benedictine schools, like those of Bede at Jarrow, Alcuin at York, Lanfranc and Anselm at Bec, were the educational centers of Europe.

The reforms introduced by Benedict of Nursia which led to the flourishing development of monastic institutions contained within them, however, the seeds of their own destruction. The ideal of work, practised over a long period of years, converted the once lonely and desolate monastery into a prosperous center of wealth and culture. But the monastic aspiration for self-renunciation was defeated by its own labors. Once more ardent spirits sought refuge in the desert as an effort toward that primitive renunciation which was the dream and despair of monasticism during the long centuries of its existence. It is this conflict which was responsible for the various Benedictine reforms and for

the founding of new orders and congregations. The first of these reforms originated with Benedict of Aniane (died *c.* 821), who at first sought to remedy the situation by a return to the more primitive eastern type of monasticism. Soon, however, he realized that salvation was not of the East. He embraced the Rule of Monte Cassino, brought about its stricter enforcement and sought to establish a renunciation which should express itself in rigid uniformity of food and drink, dress and order of services.

Decay of the monasteries continued, however, and the next great attempt at reform was that of the Cluniac movement. The weakness of the monasteries had lain hitherto in their isolation, each a law unto itself. The Cluniacs introduced a connectional principle and formed congregations under the leadership of Cluny. Thus monasticism passed into the third stage: the evolution of communities into one international organization. But within a hundred years the connectionalism of Cluny resulted in its downfall because of its centralization of wealth and power. From the forty Cluniac dependencies in England alone there was an intolerable drain of gold to Cluny, making the sequestration of these "alien priories" a national necessity. One result of this growth in wealth was the foundation in 1098, by Robert of Molesme and the Englishman Stephen Harding, of Cîteaux, which, however, owed its importance to the entrance of St. Bernard in 1112. Reform was once more sought by a literal observance of the Rule of St. Benedict. With the Cistercians every foundation was an independent abbey and not a subject priory of its parent. But the connectional spirit was kept up by an annual congregation held each September at Cîteaux, with the right of visitation reserved to its abbot. Moreover from the first the Cistercians were independent of all episcopal authority, binding themselves to direct obedience to the pope. They too sought the wilderness and the solitary places, but with their insistence on manual labor they soon amassed great wealth by their improvement of the soil and by their animal breeding. One great result of the Cistercian movement was the development of the wool trade, especially in Yorkshire, by the introduction of superior breeds of sheep. The export of wool by the Cistercian monks became a feature of the commerce of England, while in Burgundy the most famous vineyards came under their control. Their churches were marked by great simplicity of ritual; no rhymed hymns were used and no ornaments were allowed in their architecture. Although at first the Cistercian colonies were missionary centers which did much to civilize surrounding districts, their farming and commerce led to the association with the monks of an excessive number of lay brethren, especially on the continent. These were inferior persons, often peasants, and their acceptance tended to a class separation which ministered to pride, while the accrued wealth robbed the order of all spiritual power.

For education the Cistercians did nothing. In fact they possessed no schools except those for novices. In the twelfth century the monasteries one by one closed their doors to outsiders and seculars, a course for which they found justification in the rapid rise of the cathedral schools. These more unrestricted schools were of two kinds: the elementary song school, which provided training for the cathedral choir, and the grammar school, which concentrated on Latin and the quadrivium. They fulfilled the double function of educating boys to be administrators and of developing a native priesthood in Latin and elementary theology. From these secular foundations it was but a short step to the higher functions of the new universities, which owed nothing to the monks and to whose spirit they were quite alien.

The Cistercians were the first of the orders bound to the papacy by direct oaths of obedience. The military orders (*q.v.*) arose at the same time. In 1128 St. Bernard assigned to the famous Templars a rule, the greater part of which is by a later hand. About 1120 Raymond de Puy reorganized the Hospitallers of St. John of Jerusalem, the object of which was to keep open the roads to Jerusalem. In 1190 Walpot von Bassenheim, a trader of Bremen, established the order of Teutonic Knights, who in the early thirteenth century forced the heathen Prussians into a reluctant Christianity and led to the Germanization of the Baltic provinces. The establishment of these orders forms a new stage in the evolution of monasticism. In the hermit asceticism was the main thought; in the monastery poverty, celibacy and obedience were the distinctive marks; the military orders anticipated the Jesuits by once more laying stress upon obedience.

Along with the rise of these larger orders there was a return in some quarters to the eremitical methods of the past, as, for example, by the Camaldulians founded by Romuald of Ravenna about 1012; by the Vallombrosans founded in 1038; and, best known although not the most important, by the Carthusians, who in 1084

under the lead of St. Bruno established themselves at Chartreuse. In the Benedictine orders the monk had nothing to do with the lonely cell. He lived in the community of church or cloister. The Carthusians—a modern development is to be found in the Trappists—returned once more to the independence and silence of a congregation of eremites.

The coming of the friars constituted a further development of monasticism; far from shunning men they actually sought them. So different was this new conception of monasticism that the friars were forbidden to enter any monastery. They were forbidden to hold property of any sort; and that which they used was owned by trustees, while they themselves lived by begging. The friars represented largely a town movement; their houses were in the suburbs or slums. Their aim was to fight infidelity of every kind, Cathari and the rest; and in consequence their influence upon the new universities, in which the older monasticism had little place, was remarkable. In the thirteenth and fourteenth centuries they were the intellectual leaders of Europe. But the wave of enthusiasm and culture of which the friars were both cause and result passed the older houses by. In the fourteenth century they neglected even their chronicles and in some cases sold their libraries. By the dawn of the Reformation they had become intellectually stagnant.

Simultaneously with these currents in monasticism came the development of the canons regular. In the sixth and seventh centuries it became the custom in Gaul and Spain for the clergy in a town to live together in the bishop's house, not only for the sake of discipline and concentration of resources but also in order to secure better training of the younger clerics. The members of these communities were called canons, a title originally applied to all who were entered on the church roll as recipients of church funds. The payments which such canons received were called prebends, and were separated from the general funds under the bishop's control. At the close of the eighth century attempts were made to bring the canons into line with the monastic ideal by forcing the clergy to live a common life. The leader in this movement was Chrodegang of Metz (died 766). Moreover in order to assist education one of the canons was designated chancellor or schoolmaster. Chrodegang's rule and its later developments differed in two ways from the Rule of Benedict. Instead of wealth reverting to the common fund, the canons were allowed a life interest in the property and a share of fees and offerings. Moreover each canon was permitted to have a dwelling of his own and discipline, church services and manual work were not peremptory. Chrodegang's reform was short lived even in the towns. In England the reformers of the tenth century, under St. Dunstan, expelled the canons from nine cathedrals and replaced them by monks. Chrodegang's attempt was revived by Yves of Chartres (*c.* 1040–1116), who in 1078 introduced into collegiate churches a rule drawn in part from the work of St. Augustine. It is from this rule that these canons received their name of canons of St. Augustine, or Austin canons. Canons were introduced into England in 1107 by Anselm; and from the first, although they renounced private property, they abandoned the negative sides of self-renunciation. They launched into the parish life which centered round their collegiate church; often hospitals were attached to their houses. One congregation of Austin canons, led by St. Bernard of Menthon, founded the hospices of St. Bernard on the passes of the Alps in 962. The continuity of this form of charity is seen in the endeavor to repeat the enterprise in Tibet in 1933. Another congregation of canons regular, the Gilbertines (*c.* 1130), was the only English order ever founded; a small mixed order, it centered chiefly in Lincolnshire, and its estates, noted for their wool output, were administered by the canons, while the government was in the hands of a committee composed of two canons and two nuns. The Austin canons organized in 1120 by St. Norbert at Prémontré near Laon in France were called Premonstratensians, or white canons. Under the Austin rule they emphasized the connectional idea, and a general chapter of the thirty different provinces and the "correctors" at their head was held on the ninth of October annually until 1736 at Prémontré. They were strong among the Wends of Prussia, to whose Christianization they devoted themselves.

Nunneries existed and developed *pari passu* with monasteries, with a regime similar though less intensive and with far inferior resources. In monasteries Latin conversation was compulsory; in nunneries French was permissible. Nunneries often served as boarding schools for wealthier girls and as such survived long after the monasteries had closed their doors to all outsiders, but otherwise they had little social or economic influence. Early English nunneries had one curious feature: many of them were double monasteries, in which the abbess ruled over the men. Such arrangements, whereby a society of regular

priests ministered to the spiritual needs of women, and the necessary association involved were not essentially new. In Pontus St. Basil and his sister Macrina presided over settlements of men and women separated only by the river Iris. Although prohibited in 506 by the Council of Agde in Languedoc as well as by Justinian, the system of double monasteries flourished. Before the advent of the Irish Columban they were numerous in Gaul, while after his arrival some of the largest and most famous developed, although none of them owed their origin to the saint himself. A further impulse to the establishment of double monasteries in Germany was provided by the disciples of Boniface, many of whom had received their training at the double monastery of Wimborne. From the first double monasteries flourished in the Celtic church, probably because these were a survival of the old clan system under which men and women belonged to the same religious community. In Ireland the head of such monasteries was usually a man, as was the head of the clan; but in the Scotch-Irish monasteries of England, especially in those founded by royal princesses, and in Columban's double monasteries in Gaul and Belgium the monastery of clerks or priests at the gates of the nunnery was ruled over by the abbess. This inversion of the normal relationship is probably due to the fact that the original foundation was the nunnery; for the spiritual needs as well as for the oversight of its estates there grew up a smaller dependent monastery of priests and lay brethren. In some double monasteries the monks were in the majority.

The wealth of the monasteries was most unequally distributed; some smaller monasteries were always handicapped by insufficient means. Broadly speaking, monastic wealth consisted of lands or church appropriations. Much of the land, especially that of the older institutions, was acquired as a result of monastic colonizing activities; the rest represented endowments or purchases from needy landlords. Friction developed where a town had grown up around the monastery. Originally a place of refuge, in time the monastery became a landlord more harsh than any baron, if only because it was never driven by death or poverty to sell its irritating feudal rights or to emancipate its serfs. Much of the wealth of the larger monasteries was secured by appropriation of the better livings and by the substitution of a poorly paid "vicar" in place of the "parson." Although from the twelfth century onward bishops in England were careful to insist that the vicars should have an adequate stipend, the monasteries continued to despoil the secular church by taking the greater tithes for themselves. In England, for instance, where there were over eight thousand parishes, the majority of the wealthier parishes had been appropriated to the monastic foundations by the end of the fourteenth century. Very often the monastery not only appropriated the tithes but closed down the parish church, giving to the parishioners some rights in the nave of their own abbey which at the Dissolution thus escaped destruction. In other cases, where the parish church was appropriated, the chancel became monastic property; and often at the Dissolution it had then to be bought back by the parishioners or else be destroyed. Nevertheless, despite these constant appropriations the finances of the monasteries were often unsound, and for several reasons. As a result of the lesser number of entrants after the Black Death of 1350 and the consequent diminution of what might be called entrance fees, the majority of the monasteries remained only half occupied. Moreover most of the monasteries had been too lavish in the building of their churches, which were often far larger than necessary, and had raised money on interest at rates of 10 percent or even more, paid in wool or other produce. With the collapse after the Black Death of the old systems of farming the interest charges, whether in commodity values or in the new money, coupled with the cost of the monastic church, came to be an intolerable burden. No new monasteries were founded; a cheaper means of obtaining prayers for the dead was found in the endowment of collegiate secular churches and of numerous chantry chapels.

From the twelfth century onward monasteries began rapidly to decay, culminating in England in the Dissolution by Henry VIII. The causes of the Dissolution have been the subject of much controversy, but the idea, at one time so prevalent, that the monasteries were seats of corruption and vice may easily be dismissed. This tale was spread by commissioners of Henry VIII to justify their actions. Wycliffe, the stern opponent of all monasteries, brings no special charge of immorality against the monks of his day. In his view their crime was a self-satisfied lack of spirituality which he looked upon as a religion of fat cows containing nothing to help subdue the flesh. The actual causes for the decline of the monasteries were many. They had ceased to play any part in the educational life of the country

and had discontinued the copying of manuscripts or the writing of chronicles. While at one time they had fulfilled certain social functions, such as providing guest houses for travelers, Wycliffe claimed that the guest houses in many places had been allowed to fall into ruins and that hospitality was restricted to the rich to the neglect of the poor. Further the monasteries had earned the hatred of the secular church by their appropriation of the livings and by the fact that so many monasteries were exempted from the control of the bishop, maintaining that they were "a state within a state" responsible only to the pope. The constant addition of lands had also brought the monasteries into conflict with the state, which found it necessary to pass acts of mortmain and to resort to other means in order to restrict the growth of landed wealth. With this growth of wealth the monasteries had ceased to carry out their rule of labor by their own hands; their farming was now done for them by others on a money basis. Nor must the excessive financial cost of these monastic establishments be overlooked. After 1350 the cost per monk in some of the wealthier monasteries amounted to the equivalent of two thousand dollars a year; at Westminster, Glastonbury and St. Albans it was far more. It was asked whether the monks showed any adequate return for such excessive costs. They were even accused of misusing their charity funds, and there were undoubted illustrations of the diversion of these funds into monastic coffers. The Lollards protested that the monasteries had "almost all lordship amortized in them yet they will not pay tax nor tribute to the King for maintenance of the realm." Thus when the hour of their trial came, they had no friends. The state opposed them because of their position with regard to the payment of taxes. They had long ceased to be democratic and their abbots were too often the nominees of wealthy politicians. Their broad acres had become an object of envy to the new nobility; and they had estranged the secular church by their appropriations and aloofness. The cause of the fall was not so much the positive evil that they wrought—in truth they still performed many social functions—but rather the fact that they had ceased to be a spiritual force and to fulfil the purposes for which they had been founded. They had lost the power of self-denial which had made the orders so great.

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See: RELIGIOUS ORDERS; MILITARY ORDERS; CLUNIAC MOVEMENT; FRANCISCAN MOVEMENT; DOMINICAN FRIARS; JESUITS; RELIGION; RELIGIOUS INSTITUTIONS; PRIESTHOOD; CHRISTIANITY; BUDDHISM; ISLAM; PAPACY; REFORMATION; ASCETICISM; CELIBACY; COMMUNISM; MISSIONS; EDUCATION; MANORIAL SYSTEM; MORTMAIN.

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MONCADA, SANCHO DE, early seventeenth century Spanish theologian and economist. Moncada attained distinction by his *Restauración política de España* (Madrid 1619; reprinted in 1746), in which in typical mercantilist fashion he diagnosed and prescribed a remedy for Spain's decadent economy. He ascribed the economic decline of Spain to the discovery of the Indies, which in bringing about an abundance of precious metals and a price level higher in Spain than in other countries served to encourage the importation of foreign goods to the detriment of domestic production. The resulting unfavorable

balance of trade, aggravated by the payment of rents, annuities and other remittances to foreign creditors, expressed itself in a drain of precious metals, which not only caused a dearth of means of payment in the country but greatly strengthened the financial and consequently also the military powers of the enemies of Spain and the church. In order to repatriate the treasure Moncada proposed a rigid prohibitive system which should reverse Spain's position as an importer of manufactured goods and an exporter of raw materials, relieve unemployment and stimulate the growth of population. Advocating the death penalty for the exporting of specie and for the importing of foreign manufactures, he recommended the Inquisition as an instrument for enforcing the commercial restrictions. Moncada favored heavy taxation of agriculture, because nature as a source of wealth is "indefatigable"; he urged price fixing for agricultural products, although he doubted the efficacy of fixing the legal prices at a level lower than that of "natural" prices.

ROBERT S. SMITH

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MOND, SIR ALFRED. *See* MELCHETT, LORD.

MONETARY CONFERENCES. *See* MONETARY UNIONS; MONETARY STABILIZATION.

MONETARY STABILIZATION. In its broader usage the term monetary stabilization is synonymous with stabilization of the general price level (*see* PRICE STABILIZATION). In its more restricted meaning, as used in this discussion, the term signifies the fixing of the value of a particularly wayward currency in terms of some less erratic money or merely the elimination of extreme shifts in its purchasing power.

The value of any given currency may be measured either by its command over commodities in the area in which it circulates or by the rate at which it exchanges against other currencies. The rate at which one currency exchanges for another depends, however, upon the purchasing power of the measuring as well as of the measured money. Stable purchasing power of any given monetary unit is therefore compatible with unstable exchange rates. Per contra, exchange rates may be kept stable although the commodity purchasing power of the currencies concerned is fluctuating; all that is necessary is that the currencies should fluctuate substantially in unison.

With exchange rates accurately reflecting the internal purchasing power of the currencies concerned, there are four possible sets of relationships in respect to stability of any given currency. These are: first, stable internal purchasing power and stable exchange rates—all currencies are stabilized; second, stable internal purchasing power and unstable exchange rates—the measuring currencies are unstable; third, unstable internal purchasing power and stable exchange rates—the measuring currencies are unstable but fluctuations occur in unison with those of the measured currency; and, fourth, unstable internal purchasing power and unstable exchange rates—the measuring currencies may be either stable or unstable and exchange rates will therefore tend to fluctuate in the one case proportionately and in the other disproportionately with the changes in the internal purchasing power of the measured unit. Since there has never been a currency of unvarying purchasing power, neither of the first two possibilities is other than an unattained ideal. The third possibility has been more or less completely realized whenever a given monetary material has become widely established. Prior to the nineteenth century this happened with silver and in the early years of the twentieth century with gold. The intervening transition from silver to gold moreover did not disturb the situation, since bimetallic standards in some important countries had the effect of tying together silver and gold standard moneys at the bimetallic mint ratio and therefore of establishing fixed rates of exchange between all moneys on a gold, silver or bimetallic basis. The problem of monetary stability, in the narrower sense, arises with respect to one or more currencies of the type indicated in the fourth category and resolves itself, in the modern world, into the resumption of the gold standard, or some approximation thereto, as a means of securing some degree of stability in purchasing power, with absolute stability in exchange rates on gold standard countries, and thus of escaping from monetary chaos.

Thoroughgoing currency disorganization rarely occurs in other than inconvertible paper monetary systems, and although it is by no means inevitable in such systems it has as a matter of record usually accompanied them. Perhaps the most outstanding exception is that of the first paper pound from 1797 to 1821, and it may be

said in general that Great Britain has managed inconvertible paper money with rather more circumspection than has been shown by any other country. Properly handled paper currencies might perhaps be the most stable form of money, but so far from having been consciously set up toward that end they have almost always resulted from an undesired lapse from metallic monetary standards. This lapse has ordinarily not been checked short of threatened or realized disaster. Under metallic monetary standards, with or without convertible paper issues, there are physical limits to the possibility of expansion of the currency. In the case of inconvertible paper there are no such objectively imposed restraints and self-restraint has generally proved so inadequate as to have led to monetary disorders sufficient to make metallic standards seem like stability. This was particularly true of most European currencies following the widespread abandonment of the gold standard during the World War. The extreme monetary disorder which came to reign on the continent rendered currency stabilization an urgent necessity for many countries, and it is out of their varied experiences that something like a standard body of doctrine has emerged.

Three principal types of wartime inflation and depreciation may be distinguished. In Great Britain, Holland, Switzerland and the Scandinavian countries inflation and depreciation had not been so great as to make it impracticable to restore the pre-war monetary unit. In France, Italy and Belgium the process had gone so far as to preclude resumption of a gold currency on the old basis and these moneys were stabilized with the unit containing from one seventh to one quarter of the amount of gold in the pre-war standard coins. In Germany, Austria and Poland depreciation was all but infinite, and stabilization was effected by the introduction of new currency units in which the depreciated currency was redeemed at extremely low ratios. The adoption of a new rather than the stabilization of the old unit was, however, a mere matter of accounting convenience. The really significant contrast is between the first group of countries, where revaluation involving the raising of the gold value of the monetary unit to its original status was undertaken, and the second and third groups, where depreciation was accepted and a corresponding devaluation of the monetary unit definitively established.

The return to and maintenance of a full or modified gold standard involves the equation of inflated paper with world gold price levels. This may be accomplished either by such an alteration of the paper price structure as will bring it into correspondence with gold prices at a predetermined gold value of the currency unit or by such an alteration of the original gold weight of the currency unit as will sustain the current price level on a gold basis. Stabilization of a depreciated currency at the original gold value of the monetary unit is possible only through a process of deflation and a postponement of final action until prices can be reduced to the requisite level. Whether or not this should be done is a question of ethics, politics and pragmatic sanctions, the latter being in many cases decisive.

Where depreciation has been so great that resumption of the old value of the currency unit would involve an interest burden on the public debt alone, approximating or greatly exceeding the whole prospective national income, devaluation is clearly inevitable. Devaluation, a matter of course in such circumstances, has marked advantages in all. The restoration of the original value of a depreciated currency not only means a prolongation of instability until the final goal is reached, but it brings about that most devastating form of price change—a prolonged fall—with accompanying strain on business and financial institutions and widespread unemployment. Debtors will have secured undeserved gains and creditors incurred undeserved losses as a result of inflation, but the degree of such gains and losses and the individuals to whom they accrue will have been constantly changing during the whole process of depreciation. The losses and gains can therefore not be nullified by an alteration of the value of the currency in the opposite direction. Such an alteration merely establishes a new series of inequities. If there is added the burden of distress which deflation brings in its train, the case for such devaluation as will prevent a great and prolonged fall in prices becomes overwhelming.

It is inevitable, however, that there should arise a struggle between those who will benefit by a higher valuation of the currency, or low prices, and those who will benefit by a lower valuation, or high prices. In the first group is the whole rentier class and, in general, people with fixed money incomes. Since wages are rather more sluggish in their movement than are commodity prices, the interest of the laborer is with the rentier, provided employment can be maintained. If it cannot be so maintained, and during periods of steadily falling prices it never

has been, the interest of the laboring class along with that of the entrepreneur is in higher prices. Higher prices mean lower entrepreneurial costs relative to returns, good profits, active business and little unemployment.

On the whole equity is best served by a devaluation of the gold content of the currency unit in strict proportion to the fall in gold value which has taken place during the period of depreciation. Expediency, however, demands something more. The resumption of a gold basis puts a certain strain upon financial machinery which a valuation somewhat below the level strictly appropriate to the existing scale of prices does much to ease. Such a valuation will for some time maintain the rising price trend on a moderate scale. This not only gives an added fillip to business but reduces the fiscal burden and strengthens financial institutions. The currency value of any stock of gold which the commercial banks may hold is augmented, and the consequent rise in reserve ratios permits the safe extension of the enlarged credits which a rising price level and active business will require. Moreover during the transitional period, in which domestic prices have not yet reached the level appropriate to the comparatively low gold stabilization rate, the ratio of exports to imports will be high. The consequent influx of gold doubly assures success. It should be noted, however, that this gold accrues only because the country is selling its exports at bargain prices while paying a relatively high price for its imports; this may be good tactics so long as gold is urgently needed, but its abuse is costly.

On the combined grounds of equity and expediency the choice of the rate of stabilization should therefore be somewhat but not greatly below the existing value of the currency unit. There are two measures of this value, the price level and the exchange rate. The general principle is to take the lower of the two values thus indicated. To this, however, there is a potential exception. If the exchange value of the currency is extremely depressed relatively to its value as indicated by the price level, it may be worth while to attempt stabilization at a higher figure than the existing exchange rate would seem to warrant. For technical reasons shifts in the exchange rate very frequently exaggerate the alteration in the long run worth of a currency. In the circumstances to which reference has just been made it is therefore probable that the exchange rate can be raised to and maintained at a higher level without compelling a downward adjustment in the price structure. Such a level would prevent futile injustice to creditors and would do no harm to other interests.

The contrast between the effects of revaluation and those of something more than proportionate devaluation appears in the economic and financial history of Great Britain and France from 1925 onward. The constant tendency of Great Britain to lose gold in this period and the still stronger tendency for France to acquire it are to be explained almost entirely by the fact that Great Britain chose to revalue the pound at a level above that which internal prices indicated as appropriate, while France took the opposite course with the franc. The British were under the necessity of lowering their price level if they were to maintain the chosen status for the pound. They did so, but resistance was so great that this could not be accomplished in adequate degree. The result was successful stabilization in France, while Britain was in the end unable to maintain the gold standard. In addition the rise in the French price level and the fall in the British made for some years of active business in France and for relative stagnation in Great Britain. The British had a special reason for returning to the original valuation of the pound in their large volume of foreign investment expressed in sterling and perhaps also in the prestige which rightly or wrongly was involved in the resumption of the old unit. These advantages, however, were in any case lost when specie payments were again abandoned in 1931.

The specific methods adopted in initiating stabilization programs varied in different countries. The fundamental cause of disorder was the irresponsible issue of paper currency, but its chief manifestations were the advance in internal prices, the rising cost of gold exchange and unbalanced budgets. The derangement was frequently out of all proportion to the original cause —every effect was cumulative—and it was therefore possible to launch the attack on any sector with some prospect of success. Varying circumstances made it desirable or even necessary to select one salient rather than another. Where practicable the best procedure, however, was a substantially simultaneous attack on all fronts limiting the purpose, with respect to the volume of circulating medium, to the checking of any further increase.

In adopting a program of stabilization determination of the precise objective may be left in abeyance during a period preceding the definitive resumption of specie payments. Instead of

taking an immediate decision on the gold content of the currency unit with support of such decision by the acceptance at substantially the announced figure of all bids and offers of the domestic money against gold or gold exchange, it is possible for the authorities to leave the gold content undecided until some approximation to a constant exchange rate issues from the internal stability attained by the cessation of further issues of currency and the balancing of the budget. The advantages of the latter method lie mainly in the fact that its use permits the early stabilization of the more important internal price situation at the expense of a temporarily fluctuating exchange rate. The former method, on the other hand, while securing immediately stable exchanges involves the risk that an inaccurate choice of the stabilization rate will necessitate an unduly large movement in the domestic price level in the necessary process of equation with world gold prices; and, if the rate is set too high, exhaustion of reserves and failure of the stabilization program are a probable result.

A large reserve of gold or foreign exchange, acquired in advance through a foreign loan or otherwise, is useful but not indispensable to stabilization. Out of this reserve any excess of current demand over supply of foreign exchange, at the chosen rate, must be met. If no such reserve can be acquired it is essential that the stabilization rate be set so low as to insure as quickly as possible an excess of foreign currency demand for the newly stabilized money over any probable demand in the opposite direction. Reserves and confidence reciprocally fortify one another. If there is neither confidence nor reserve, the only recourse is to set so low an exchange valuation on the newly stabilized currency that it will strongly discourage the attempt to cash it. Even then restrictions on the demand for gold or foreign exchange may be necessary, although these still further diminish confidence and postpone the advent of thoroughgoing success. In the stabilization of the franc the Bank of France secured a considerable reserve by buying gold and foreign exchange with new paper currency issues and thus, somewhat paradoxically, prepared for stabilization by first increasing the degree of inflation. This policy was shrewd enough, although it involved a lower valuation of the currency than might otherwise have been attained and meant a further exploitation of the holders of that currency or of fixed claims thereto in the interest of the issuing authorities.

Where currencies are highly depreciated, the internal velocity of circulation of money usually becomes very great. Stabilization is practically certain to reduce it. The result is a demand for a greatly enlarged volume of currency to maintain the price level appropriate to such rate of exchange as may have been chosen in valuation of the currency or, if the exchanges have been left temporarily free, to prevent a disconcertingly rapid rise in the exchange value of the money in question and a fall in prices. In such circumstances the effect of stabilization is to bring about a renewal of the issues of paper currency, the excessive issue of which had been the original cause of disorder. No evil consequences, however, are likely to ensue from this supplementary augmentation of the currency. On the contrary, it greatly facilitates the task of stabilization, since in the case of a governmental issuing authority it gives the fisc some painless revenue and in other cases makes it easy for the banking administration to build up a gold reserve in exchange for the new issues.

Stabilization of the currency is normally followed by a business crisis. Inflation makes for high profits and rapid turnover of goods. Temporary prostration is almost certain when the mounting ratio of commodity prices to costs is checked by stabilization, and the population tends to hold its money rather than to spend it. Provided, however, that the new valuation of the currency unit does not involve a falling price level, the crisis is not likely to be lengthy.

Monetary disorder frequently promotes a "flight from the currency" or, as it is erroneously termed, an export of capital. There is little of that real export of capital which involves the taking of title to future income in exchange for present purchasing power or commodities. What happens is that holders of a disordered currency are ready to part with it at low prices in foreign exchange while buyers will not pay much in foreign exchange for so uncertain a purchase. There is also a reluctance on the part of citizens to transfer accruing foreign balances into the domestic currency. This drives the exchange value of that currency down. When the stabilization process is begun, especially when no fixed exchange rate is yet established, there becomes operative the counter disposition to buy rather than sell a currency which will not fall farther and which may rise or to effect the postponed transfer of foreign balances while the home currency is still cheap. The result is the realization of the anticipated rise in the exchange value of the domestic currency or the placing of an undue

accumulation of foreign exchange in the hands of the note issuing institution, with a corresponding increase in its issue of notes. The perturbation of exchange rates, internal prices or both involves at least a temporary failure of the stabilization process. An early decision as to a definitive rate does something to prevent the dislocation attendant on the form of gambling here involved. On the other hand, government and central banks, once they have decided what the rate is to be, but without announcing it, are in a position to discourage speculators and incidentally to make money. They need only keep silent, selling the domestic currency when it goes above and buying it when it goes below the determined level. Thus they limit the fluctuations and establish de facto exchange stabilization. De facto becomes de jure whenever the authorities put through legislation giving to individuals the right to acquire from or sell to the government or central bank unlimited amounts of the domestic currency at a fixed rate in the standard metal or money.

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See: PRICE STABILIZATION; INFLATION AND DEFLATION; DEVALUATION; RENTENMARK; MONEY; PAPER MONEY; FOREIGN EXCHANGE; CENTRAL BANKING.

Consult: Great Britain, Parliament, House of Commons, Select Committee on the High Price of Gold Bullion, *The Paper Pound of 1797–1821* (1919); Poland, Ministerstwo Skarbu, *Reports Submitted by the Commission of the American Financial Experts Headed by Dr. E. W. Kemmerer* (Warsaw 1926), published also in Polish, 3 vols. (Cracow 1926); Rogers, J. H., *The Process of Inflation in France, 1914–1927*, Social and Economic Studies of Post-war France, vol. ii (New York 1929); Harris, S. E., *Monetary Problems of the British Empire* (New York 1931); Rist, C., *La déflation en pratique* (Paris 1924); Graham, F. D., *Exchange, Prices, and Production in Hyperinflation: Germany 1920–1923* (Princeton 1930); Schacht, H., *Die Stabilisierung der Mark* (Berlin 1927), tr. by R. Butler (London 1927); Heilperin, M. A., *Le problème monétaire d'après-guerre . . .* (Paris 1931); Cassel, Gustav, *Money and Foreign Exchange after 1914* (London 1922); Zolotas, Xénophon, *L'étalon-or en théorie et en pratique* (Paris 1933).

MONETARY UNIONS. A monetary union is an agreement between two or more states to adopt some form of common regulation of their respective currencies. The scope of the agreement may vary from mere legalization of joint circulation of currencies in frontier districts, whereby public offices are enjoined to accept the coins of a neighboring country, to complete transfer of the currency function from one state to another, as when Luxemburg made such transfer to Belgium, Monaco to France and Lichtenstein to Switzerland. Within these two extremes there are many forms of monetary unions, which may be divided into three categories: first, those in which the parties to the union allow the circulation of all or certain foreign coins at a fixed ratio to the domestic coins; second, those which involve the introduction of a common monetary unit; and, third, those which provide for common coinage and identical imprint.

It is held that the earliest monetary unions were those contracted between the Greek city-states. The best known is the alleged union between the Greek cities in Asia following their emancipation from Spartan rule in 394 B.C., although the inscription on the coins indicates that they may have been issued merely to celebrate the alliance which resulted in victory. In late antiquity and the early Middle Ages the city-state was replaced by large states, which frequently left the task of actual coinage to the local administrations and reserved the function of currency regulation to their respective central authorities; there was thus no need for monetary unions. With the decay of the centralized state in western Europe monetary unions once more became necessary particularly in Germany, where the process of decentralization went further than in other countries of western Europe. Thus during the Middle Ages monetary unions were confined for the most part to Germany, although they existed also among the city-states of northern Italy and in France. Monetary unions between two cities were known in the thirteenth century. Of greater importance, however, and more characteristic of the Middle Ages were the unions set up in the fourteenth century which covered larger areas, as, for example, those in Franconia, Swabia and on the upper Rhine; the last contained seventy-four mints in 1387 and was soon thereafter succeeded by the so-called Rappenmüntzbund, which continued for more than a hundred years. In northern Germany the union established in 1225 between Hamburg and Lübeck and joined by other cities rose and declined in importance with the Hanseatic League. The common purpose underlying the mediaeval monetary unions was the coining of bullion according to a common standard, often also with identical imprint.

After the sixteenth century the German empire attempted to reserve the coining prerogative to itself. It provided for the minting of large silver coins and also laid down the rules govern-

ing the coinage of smaller denominations by the local authorities. Impeded by the Thirty Years' War, the efforts of the empire were continued after the war but were again interfered with by the monetary union formed in 1667 by a group of powerful princes in Zina which introduced a monetary standard inferior to that of the empire; the Leipsic union formed in 1690 had a similar effect. It was not until the nineteenth century, when the creation of the German customs union led to the adoption in 1838 of a common monetary unit in all the states which joined the Zollverein, that currency became centralized. There followed the Vienna union of 1857 which made the thaler the common coin of Austria, southern and northern Germany but which was interrupted by the war of 1866. The formation of the new German Empire in 1871 and the adoption of the gold standard in 1871–73 completed the monetary unification of Germany.

While the idea of an international currency was suggested at a comparatively early date and was urged repeatedly from the sixteenth century on, it was not until the middle of the nineteenth century that the growing volume of international economic intercourse brought it within the realm of international action. As the more important countries were on a gold, a silver or a bimetallic standard the need for greater stability of foreign exchanges was strongly felt. In 1850 the French economist Chevalier suggested that the various countries mint a gold coin of identical weight and quality and that a definite rate of exchange be fixed each year between this international coin and the currencies of those countries which were on a silver basis. At this time, however, the idea of a world gold currency was sidetracked on account of the depreciation of gold which set in in the 1850's and which led countries like Belgium and Switzerland, hitherto on a franc standard, to the complete adoption of silver. Moreover the opinion was widely held at the time that the fluctuating market ratio between gold and silver was due to a considerable extent to the changing monetary legislation of the different countries, and that it might be stabilized if the more important states could agree upon the adoption of the double standard. Consequently, on the initiative of Belgium, the Latin monetary union (Union Latine) was set up in 1865 by the countries on the franc standard—France, Belgium, Switzerland and Italy—among which a certain degree of joint circulation of currency had already taken place. But because of the renewed appreciation of gold in terms of silver, which had reaffirmed the general belief in gold as the leading monetary metal of the future, the three countries last mentioned now expressed a strong desire to base the union exclusively on gold. France, however, still possessing considerable amounts of silver, succeeded in making the double standard the foundation of the union, which was based in all essential respects on the French currency act of 1803, except that gold and silver were given an equal position. The standard coins of the union were the gold 100, 50, 20, 10 and 5-franc coins and the silver 5-franc coin, all of a fineness of 9/10. In addition each country was entitled to coin union silver token money ranging from 2 francs to 20 centimes to an amount of 6 francs per capita; the smaller subsidiary currency remained national, independent of the agreement. In order to secure the circulation of the union currency all public offices were obliged to accept it in payment, although they were not required to accept amounts of foreign subsidiary currency above 100 francs. The union was to remain in force until 1880, and unless renounced at a year's notice was automatically to be renewed for another 15-year period.

The founders of the Latin Union believed that they had laid the basis for what might eventually develop into a world wide monetary union based on a bimetallic currency. The agreement contained provisions enabling any state to join the union. Greece, however, which joined in 1868, was the only country to do so. The failure of other countries to join the union was probably due mainly to the fact that it was not based solely on gold; this was particularly apparent in the International Currency Conference held in Paris in 1867 at the time of the Universal Exhibition. The purpose of this conference was to investigate the principles on which a world union might be established. It was declared that such a union might be based on a franc standard, which should, however, be a gold franc. In the following years it was generally supposed that the gold franc would eventually be made the basis of the world currency; and several countries, notably Austria and Sweden, commenced to coin gold according to the franc standard, establishing a certain ratio between these gold coins and their circulating standard silver currency. Formal negotiations concerning Austria's joining the union with regard to gold currency had been initiated as early as 1867; but it was not until 1871 that a partial

result was secured, when Italy made the Austrian gold coins legal tender, a provision which was extended in 1874 to Belgium. In other countries—the Papal States, Spain, the Balkan countries and some in Central America—the franc standard was introduced; several of these states contemplated joining the union, but none of them ever did so. The influence of the Latin Union was noticeable likewise in other countries which in introducing the gold standard also adopted the fineness of 9/10, although England and a few less important countries maintained a ratio of 916.66 to 1000. The idea of a world currency based on the franc was set aside, however, as a result of the war of 1870–71 and the introduction of the gold standard in Germany and Scandinavia in a form in which the old unit of account was easily convertible into the new one.

In the meantime the Latin Union, which was bimetallic, began to experience considerable difficulties. The depreciation of silver which had set in in the early 1870's imposed a considerable strain on the monetary gold stock of the union countries while it stimulated the coinage of silver 5-franc pieces. In order to prevent the gold from disappearing completely the coining of silver was limited in 1874 and stopped entirely in 1878. Thus the bimetallic standard was transformed into a "limping gold standard." As considerable amounts of silver had already been coined and silver continued to depreciate, the question arose of making silver 5-franc pieces coined by one state and circulating in another state of the union redeemable in gold by the state of issue, a provision which, if enacted, would have amounted to a complete abandonment of the double standard. The problem raised already in 1878 was met in 1885 by the addition of the so-called liquidation clause to the agreement, according to which in case of liquidation of the union each state was required to redeem a certain amount of its silver 5-franc coins circulating in the other countries of the union; special provisions were made with regard to Belgium, where because of its proximity to the London gold market many 5-silver franc coins had been minted.

Equally considerable were the problems concerning the subsidiary currency, particularly in Italy and Greece, both of which had irredeemable paper money and consequently coined only the union token money. As the value of their currencies declined these divisionary coins were exported to the other countries of the union, in which all public offices were obliged to accept them. Their return proved of little effect, and as early as 1878 the Italian small currency ceased to be legal tender in the other countries; this provision was canceled in 1885, but it reappeared in 1893 and was extended to Greek token money in 1908. The difficulties in this connection were aggravated as the quota of fractional coins per capita allotted to each country had to be increased when several countries complained of a scarcity of small currency. From an early date it was claimed therefore that the subsidiary coinage should be nationalized; that is, that the provisions of the union regarding divisionary money should be repealed.

Still greater obstacles were encountered during the World War, when various members of the union introduced the paper standard. Despite all prohibitions the union money flowed to the country whose currency was least depreciated: in the first period of the war to France and later to other countries, notably Switzerland. Because of the efforts of the banks of issue to hoard gold currency, migration was confined mainly to the silver 5 francs and the smaller coins. Moreover the occupation of Belgium by the Germans, who introduced their own currency, caused Belgian union currency to move by roundabout ways to the other countries. The rise in the price of silver in the year 1919–20 still further complicated the situation, making it profitable to melt down the silver coins even in the countries with the least depreciated currencies, such as Switzerland. In February, 1920, a conference was initiated by France, at which Switzerland in particular demanded the complete nationalization of the subsidiary currency. Other countries disapproved of limiting the union to this extent, and it was then agreed that France and Switzerland should exchange subsidiary currency, French token money ceasing to be accepted by public offices in Switzerland; at the same time the Swiss quota of fractional coins was increased to 28 francs per capita. Thereafter silver depreciated, so that it became unprofitable to melt down the silver 5-franc coins, which then flowed to Switzerland in large amounts as a result of the further decline of the French currency. As the liquidation clause of 1885 had limited the French obligation to redeem silver 5-franc pieces returned from Switzerland to 60,000,000 francs, this movement caused considerable apprehension in the latter country, especially because it was believed that there were still in existence within the union

2,000,000,000 francs in 5-franc pieces. As a prohibition against their import proved inefficient, Switzerland declared in December, 1920, that neither foreign 5-franc pieces nor Belgian silver token money would be accepted by public offices after March 31, 1921. Having completed the exchange of the circulating foreign coins, Switzerland had accumulated foreign silver 5-franc pieces to the amount of 225,000,000 francs. Since, as a result of the migration of the Belgian union currency to Switzerland, Belgium desired to introduce nickel coins instead of the union token money, another conference was held in 1921, at which the measures taken by Switzerland were approved. Switzerland undertook to use 66,000,000 francs of the accumulated stock of foreign silver 5-franc pieces for coining purposes, while the remainder was redeemed in Swiss francs by the countries of issue over a period of five years. The complete breakdown of the union came with the reorganization of the depreciated currencies. Toward the end of 1925 Belgium announced that it would withdraw from the union on January 1, 1927, thus bringing into question whether the union should remain in existence between the other four members. As they were all eager to return to an orderly monetary system and only Switzerland could do so on the old basis, they preferred to regard the agreement as having expired. Switzerland later reformed its monetary system, so that even in that country the provisions of the union with respect to coinage are no longer in force.

Of entirely different origin was the Scandinavian monetary union, which was created when it became necessary for the Scandinavian countries to adopt the gold standard, particularly after Germany had taken such a step in 1871; an important factor in its inception was the growth of sympathy and fellowship among the Scandinavian nations, as was also the fact that there had been actual circulation of the currency of the other states in the several border regions. The union was established between Sweden and Denmark on May 27, 1873, and joined by Norway in 1875. The krone was chosen as the unit of account, its size being determined with regard to the immediate market ratio between gold and silver in such a way that the monetary units previously used were easily converted into the new unit. The union comprised all subsidiary currency without any limitations upon the volume to be coined in the respective states; it was believed that the accumulation of foreign Scandinavian token money in each country and its remittance against gold would secure a natural relation between the coinage of subsidiary currency in the individual states. It was expected further that the adoption of the gold standard would lead to a circulation of the new standard gold coins, which were more convenient than the heavier silver currency; but the circulation retained the banknotes, and the gold was concentrated in the issuing banks. For the time therefore joint circulation was confined for the most part to the subsidiary currency, as the banknotes were not quoted exactly at par. In 1894, however, the note banks of Norway and Sweden agreed mutually to accept one another's notes at par, and in 1900 Denmark joined this agreement. Still earlier the cooperation between the central banks to which the monetary union gave rise had led to another important step: in order to avoid repeated movements of gold between the countries, the banks agreed in 1885 to open accounts for one another free of interest charges both on the credit and on the debit side. At any time the creditor might demand gold from the debtor to settle the account, and the regulations of note issue were altered so as to include in the gold cover the net credit balances with the other two banks. The monetary integration of the Scandinavian countries was thus complete. Banknotes and token money were circulating at par, and drafts could always be obtained at par. The quotation of exchange rates was discontinued; the three countries became one region with regard to all kinds of payments.

In 1905, however, the agreement of 1885 was renounced by Sweden; the central bank was unable to maintain the buying and selling of drafts free of charge during a period of rapid economic development and a new agreement was reached, authorizing the banks to charge a commission. The Bank of Norway and the Danish National Bank followed this practise after 1910, but as banknotes were still received at par, the commission was obviously constricted within narrow limits; when it was raised to .05 percent, the use of drafts gave way to the shipment of banknotes.

During the World War note redemption was suspended and the export of gold prohibited, including export to the other countries of the union. The agreement between the banks as to mutual acceptance of their notes at par was abandoned, and soon the values of the three currencies came to differ. On the whole—aside from the first period of the war—the currencies

of the Scandinavian countries were less depreciated than those of the belligerent nations which tried to settle their balances of payments through gold shipments. As Scandinavia was thus drawn into the international rise of prices, the three countries introduced in 1916 on Swedish initiative the so-called gold embargo, abolishing both free coining and the obligation of the central bank to buy gold. This, however, did not inaugurate a common monetary policy; as the value of the Swedish krone remained higher than that of the two other currencies, Norway and Denmark felt justified in attempting to nullify the difference in the exchanges by sending gold coins to Sweden, until it was agreed in 1917 that export licenses for gold should not be recommended by any of the banks unless the gold was required by the receiving bank. Thereafter a difference in the value of the currencies could be counteracted only by shipments of token money. A scarcity of subsidiary currency was apparent at an early date, as the commercial blockade made it financially advantageous to melt down the silver and brass coins; consequently amendments to the monetary conventions of 1917 and 1920 authorized coins of iron and nickel. Of a different nature was the lack of fractional coins which developed in Norway and Denmark when the shipping of union token money to Sweden became profitable. As these shipments were continued despite the prohibitions issued, it was agreed in 1924 that each country should be entitled to coin its own token money, which was to be legal tender only within its own frontiers, and that the coining of union token money could be resumed only after formal disavowal of the agreement of 1924. The old union token money was gradually returned and redeemed by Norway and Denmark and these two countries now began to coin their own fractional currency. Swedish subsidiary currency, still being coined according to the provisions of the monetary convention, ceased to be legal tender in the other countries after a certain period, but the importance of this fact did not become apparent of course until their currencies were again at par with Swedish money. Thus the year 1924 meant the abolition of the monetary union with regard to token money.

With regard to gold, the provision of 1917 was repealed; and as the countries returned to the gold standard in its traditional form, the union must be regarded as having been revived as far as gold currency is concerned. But the fact that the Danish National Bank, for example, was authorized to redeem its notes with coin or bullion at its own discretion created a situation in which the union lost its importance, even if it might be said formally to have continued its existence. Although the three countries were still compelled to coin their gold currency according to the provisions of the convention, the non-circulation of gold currency and the redemption of notes by bullion made this obligation irrelevant. The provisions regarding the selling of drafts and the mutual acceptance of banknotes at par were not revived, although without formal agreement public offices, such as railway stations, in the border districts have accepted token money and banknotes of the other countries in smaller amounts. Toward the end of 1931 the three Scandinavian countries left the gold standard and introduced paper money; thus the practical importance of those remnants of the union which still existed formally was again eliminated, although the union itself has not been formally abrogated.

Monetary unions owe their origin to the desire on the part of certain states to establish a joint circulation of currency as economic relations between such states became more intimate. An additional factor has been the urge to demonstrate through some form of common currency the joint interests of kindred nations. It is possible also that the unions may have reacted favorably upon the economic intercourse between their members, particularly with regard to capital movements; capital is more easily attracted to foreign countries with the same monetary system. Apart from these inducements, however, the question whether a joint circulation of currency is still of importance to a plurality of countries must be answered in the negative. At a time when the economic relationship between countries was confined mainly to the populations of the frontier districts and when consequently payments were made for the most part in the form of coins, monetary unions might have had a direct economic importance. But with a change in the forms of commerce and in the mechanism of foreign payments in modern times, the goal of international monetary organization has come to be a community of payments rather than of currency. This notion was present in the attempts within the Latin Union to create stable rates of exchange by a stabilization of the market ratio between gold and silver. When the same metal, as, for example, gold, is used as the base of the monetary

systems of different countries, this fact in itself guarantees comparatively stable exchange rates, as was shown in the pre-war period. A monetary union could, by creating a common circulation of standard coins, limit still further the distance between the gold points and thus facilitate international payment. It may be asked whether movement in the exchange rates between gold standard countries could not be ruled out entirely, as was the case in the Scandinavian countries after the agreement of 1885; in such instances the single countries might very well retain their individual monetary systems with different units of account. This evidently is the form of an international community of payments, which is essential to international transactions. Especially since the World War the interest in monetary unions therefore has given way to the idea of creating unions of international payments; when a revival of the Scandinavian monetary union has been discussed in recent years, attention has centered in the agreement of 1885.

As early as 1892, at the monetary conference in Brussels, Julius Wolf proposed that gold shipments be avoided by the issue of international banknotes based on gold, to be deposited by the various states in a neutral country. Similarly, in 1907 Luigi Luzzatti advocated a closer cooperation between central banks with a view toward rendering gold movements superfluous by the issue of international certificates; the idea aroused great interest, particularly in the United States, as the crisis of that year had caused considerable gold shipments. Although the World War obviously impeded international cooperation, it gave rise also to the practise of earmarking gold; the regulations of several banks were altered so as to include such gold in the note cover. Since the war many proposals for cooperation between the banks of issue have appeared as a natural consequence of the keen interest in permanent world peace. Some of these proposals have even gone so far as to suggest an international bank of issue, modeled upon the Federal Reserve system. The Genoa Conference in 1922, recommending a return to the gold standard, at the same time pointed out the importance of international cooperation between the central banks; and the committee which had arranged for the conference explicitly proposed that this cooperation should aim at economizing gold and gold shipments by keeping gold balances abroad. These notions were undoubtedly strengthened by the extended application of the gold exchange standard, which naturally furthered the idea of gold concentration. Finally, the creation of the Bank of International Settlements in 1930 widened the possibilities of international monetary cooperation. France had proposed that this bank keep its accounts in *gramme d'or*, or *grammor*, in which international payments should be made. The proposal was opposed and it was decided that transfers were to be effected in Swiss francs at par. This, however, is of minor importance. The significant point is that the existence of the bank and the practise of depositing gold in the bank itself or through its intervention in the banks of the leading countries opened up new possibilities of transacting international payments without the expense of shipping gold, thereby reducing the distance between gold points and further narrowing the range of fluctuation of exchanges of gold standard countries. The consistent application of this device may well lead to the establishment of an international community of payments with the currencies of the different countries quoted at par with one another. Whether this is possible is a matter of dispute. Some argue that the movements in exchange rates between par and either the gold export or the gold import points are decisive for the maintenance of a currency because of the speculative buying and selling of foreign exchange to which they give rise, and that this alone enables the central bank to keep definite rates of exchange. Others maintain that the fixed exchange rates would lead to such economic adjustments that fluctuations in the rates would no longer be required. While it is scarcely possible definitely to solve this problem, it may be noted that the gold standard did not break down in normal times despite the increasing international intercourse which narrowed the margin between the gold points.

Within the British Empire some of the dominions, for example, Australia and New Zealand, normally have the same monetary system as the mother country. It was but natural therefore that in the interests of the empire there should be proposals of a common currency for the whole empire. When England abandoned the gold standard in September, 1931, a step which was followed by almost the entire empire, even by those parts with monetary units differing from Great Britain's, the idea of creating a common unit of account was sustained. Several new proposals have recently been brought forward. Some of them aim at the establishment of

a common paper standard which might be joined by other paper standard countries outside the empire, with the idea that this standard should be managed according to new principles, such as stability of the price level. Others have suggested that silver should again be used in the monetary system, while still others propose the creation of an imperial bank, the duty of which should be to maintain stable exchange rates within the empire. Since it was of a very general character the discussion at the Ottawa Conference in 1932 apparently failed to bring these ideas nearer to realization.

AXEL NIELSEN

See: MONEY; BIMETALLISM AND MONOMETALLISM; COINAGE; MONETARY STABILIZATION; CENTRAL BANKING.

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MONEY

THE NATURE OF MONEY. At the outset of this inquiry a twofold difficulty arises. On the one hand, there are a number of terms in common use, such as money, purchasing power, media of exchange, currency and circulating media, which, although closely related to the present subject matter and largely synonymous in meaning as ordinarily employed, yet reveal sufficien difference of significance to make it desirable t clear up their relations to one another from th standpoint of systematic monetary theory. Or the other hand, the connotation of the wor money itself in traditional British-Americar usage is wider than the meaning apparentl attached to it by many modern writers. The accepted British-American tradition defines mone functionally, assigning to it two primary and two subsidiary functions: to act as a medium o exchange and common denominator of valu and to perform the functions of a store of valu and standard of deferred payments. The function of acting as a common denominator o value is derived genetically from the other functions, particularly from that of the medium o exchange. Some doubt is thrown upon this traditional derivation of the "unit of account" function from the medium of exchange function by the historical facts available, which suggest that the reverse order of causation is applicable, a least so far as the precious metals themselves are concerned. Whatever the historical facts may be, the emergence of many different categories of media of exchange and the use of instruments of payment of a non-physical kind suggest that in the modern world the prime function which money as such carries out is to act as a denominator of value or unit of account, with money in a physical form performing in addition the functions of a medium of exchange. Money in a modern community thus consists of the various categories of media of exchange, i.e. money embodied in a concretely defined physical form, and of the non-physical means of payment, comprising the conventionally easily transferable bank deposits and similar claims on debtors expressed in terms of the unit of account, which are referred to as purchasing power. The significant characteristic of a medium of exchange is general acceptability, while that of purchasing power is easy transferability. Everything that is acceptable in exchange must necessarily be transferable, but not everything which is easily transferable is generally acceptable. Nor does the view that a deposit in a banking account is purchasing power when easily transferable necessitate acceptance of the view that all bank deposits are available as purchasing power by their owners at any moment of time, that the division into transferable and non-transferable bank deposits is coextensive with the division into demand and time deposits, that only deposits in commercial banks are purchasing

power or that the mass of purchasing power represented by bank deposits has been "created" by the bankers themselves. The dispute as to whether or not bank deposits are money (see Cannan, *Modern Currency*, p. 88–103) is important mainly from the standpoint of the question of the determination of prices. If it is held that bank deposits are substitutes for money and that the invention of banking has greatly reduced the demand which would otherwise exist for money in the shape of media of exchange, the result, so far as the theory of price formulation is concerned, is not markedly different in its ultimate consequences from that arrived at under the more usual formulations. In any case, it must be pointed out that some forms of purchasing power occupy an intermediate position between bank deposits and circulating media, i.e. those forms of media of exchange which are unregulated by the state. Thus McCulloch cites the case of Lancashire, where in the early part of the nineteenth century "the Circulation" consisted in part of Bank of England notes, in part of mercantile bills of exchange, sometimes with an enormous number of endorsements.

Media of exchange in turn may be divided into currency (*q.v.*), i.e. types of money which are subject to some form of public regulation, and other circulating media, which are not so subject, although the fact that they are generally acceptable in exchange necessarily involves tacit consent on the part of the community in which they circulate. The distinction between currency and circulating media is important, not only as throwing some light upon the problem of state intervention in the field of money but as a means of drawing attention to the circumstance that there is a greater number of commodities which serve as circulating media than of those which constitute currency. For the currencies of modern communities consist only of coins made of a very limited number of metals, and notes, whether issued by governments or banks, and circulating media which comprise such species of money but include also more primitive forms of money, where these still serve as media of exchange in various parts of the world; as, for example, the shell money of the Rossel islanders (Armstrong, W. E., in *Economic Journal*, vol. xxxiv, 1924, p. 423–29). The use of metallic and paper instruments is of course dictated by the desire to achieve the highest possible degree of standardization in the interests of general acceptability. The homogeneity, portability, divisibility and durability of coined money have been too often discussed to need more than mention here; the advantages of paper money are equally obvious: it is much more portable value for value than metallic money, and while it is probably not so economical to issue and to maintain in good condition as metallic money so far as the lower denominations are concerned, it enables the expression of values much higher than those possible in the case of metallic money. As regards purchasing power transferable simply by written order, such as the check, *giro* and *mandat*, its two great advantages are adaptability to individual circumstances so far as the expression of amount is concerned and the protection which such written orders confer against unauthorized appropriation.

All modern media of exchange, whether in the form of paper or of coin, are embodiments of the unit of account or of a multiple or submultiple thereof. The place of any particular coin or note in the hierarchy is therefore a question of denomination. But the denomination does not necessarily indicate the material of which the coin is made, whether its face value is greater than its intrinsic content or whether it is convertible into some other coin or species of money at the option of the holder or, finally, whether the species of money in question possesses full, partial or no legal tender. The impression has developed that token coins are necessarily also divisionary coins with limited legal tender and are convertible into other species of full weight, full legal tender coins, which are also embodiments of the unit of account or multiples thereof. Such habitual associations of ideas simply reflect the standardized monetary arrangements of the last century as they existed in every civilized country; they do not correspond to the present situation in a large number of countries where a regime of inconvertible paper money obtains. Divisionary coins are usually token coins and are also usually, although by no means always, legally convertible into some other species of money; alternative arrangements are limitations of amount, with merely customary convertibility at the central bank, as in the British system. It is no longer true, however, that the species of money into which such divisionary coinage is convertible is itself convertible into a precious metal, although paper money of this inconvertible kind may constitute full legal tender in the countries in which it circulates.

THE ORIGIN OF MONEY AND OF MONETARY

WEIGHTS. The present day units of account can best be described as historically determined concepts, the existing denominations having in a majority of cases a rationale different from that of the units from which they originated. In the case of currency systems in which the standard is a precious metal, the unit of account is a "real" unit, in the sense that it corresponds to a legally defined weight of the precious metal in question; but in the case of inconvertible currency systems the unit of account is an "ideal" one, in the sense that it does not so correspond, although it may have done so in the past. Both the actual metal which is or was the basis of the unit of account and the particular weight of metal at present or previously represented by the unit have changed in the course of time.

There is general agreement that the invention of coinage (*q.v.*) originated about 700 B.C. in the countries of the eastern Mediterranean; according to some authorities it had an independent origin in China and India. Before this decisive turning point in monetary history, however, the precious metals had served as money in communities with a high standard of economic development, passing not by tale but by weight. The problems of early monetary history are therefore three in number: first, whether in those communities in which the precious metals came to serve as money they took the place of previous standards and media of exchange; secondly, a more general problem, whether primitive economic societies evolved a common denominator of value before they required and utilized a medium of exchange; thirdly, the origin of the systems of weights by which the precious metals, when they began to function as money materials, were measured. The classical view which colors economic thinking on these matters is that the "medium of exchange" function preceded the function of acting as common denominator, or "standard of value." Moreover economic thought is still somewhat dominated by the concept of a single evolutionary strand of development; namely, that which has resulted in the coined money of today. It is certain, however, that in many communities the line of development was different from this: that whatever the relations in point of priority between the medium of exchange and the common denominator of value, the precious metals never served as the money of the community. Some local commodity in universal demand, either for ornamental purposes or because it filled some indispensable need in the local economic life—shells, furs, salt, pots or hoes—functioned in place of the metals and in some cases became completely conventionalized, as in the case of the Chinese knife money. As regards the priority of the two functions which money is called upon to perform, opinion generally seems to be veering to the view that the difficulties of pure barter were first overcome by the expression of values in terms of some common prized object before that object or any other served as a medium of exchange, and that the qualities which fitted a commodity to serve as a common denominator of value would not necessarily fit it to serve as a good medium of exchange. The medium of exchange had already therefore a relation to the common denominator in its aspect of consumable commodity. Thus it is suggested by Ridgeway that the origin of modern metallic systems is to be found in the existence of an ox unit in a large part of the Eurasian continent. Gold, when it became the medium of exchange, already had a value and the primitive weight units of the precious metals derive from the amount of gold which was equal to the ox value of gold, weighing being first introduced in connection with the precious metals. The weights themselves were not arrived at by any scientific process but by the use of such objects as were available, the seeds of plants taking first place in this category. Because of the conditions of production of both gold and silver it was the former metal which first played a part in the history of money; although the first coins were composed of electrum, a mixture of gold and silver.

THE CLASSIFICATION OF THEORIES OF THE NATURE OF MONEY. Theories relating to the nature of money are numerous. Ludwig von Mises has suggested that one great dividing line between such theories lies in the compatibility of the view which each takes of the nature of money with the facts of an exchange economy; he thus classifies theories of money as "catallactic" and "acatallactic," that is, those which can and those which cannot be fitted into a theory of exchange. This classification is useful in that it illuminates one important aspect of the theory—the purchasing power of money. But it seems better to start from a somewhat different point of view. Even purely "symbolistic" theories of money point to one important characteristic of money—that it acts as a unit of account—and to stress this aspect is not at all equivalent to denying that the necessity for such a unit arises out of the needs of exchange or that the concrete em-

bodiments of the unit possess value. Thus theories of the nature of money can be divided into those which stress the primacy of the medium of exchange function and those which stress the unit of account function; although some of the latter are acatallactic in character, this characteristic is really shared by the old "commodity" view of money which derived its value from its "intrinsic" content and not directly from its functions as a medium. The medium of exchange theories can be divided further into those which regard money as a valuable commodity that for various reasons came to exercise the function of a medium of exchange—the characteristic mid-nineteenth century point of view—and those which derive the value of money from the fact that it was chosen to serve as a medium of exchange—the living tradition of British-American writings on the subject. The unit of account theories again may be similarly classified into those which assert the existence of the value of the concrete embodiments of the unit of account independently of its function as a denominator of value and those which consider money as the objective representative of debts and the legally authorized means of settling them, which derives its value from the quantitative relationship between itself and these debts (claim theories). The latter theories represent a view which is growing in importance and is at present advocated by many recognized authorities (Cassel, Schumpeter, Hawtrey). The state theory of money should be regarded as a third variant of the unit of account theories. To Knapp and his followers money is simply an instrumentality created by the state with which to settle debts; it has no value as such but is merely the symbol or unit by which value (or debts) is expressed. It is easy to exaggerate the importance of differences of opinion as to the nature of money. The overwhelming majority of writers, whether they would describe the "soul of money" as consisting in its being a unit of account or a "claim," or *Anweisung*, or a medium of exchange, would agree that the two really significant questions to be asked about money are, first, whether it possesses value, and if so, what that value is and how it is determined; and, secondly, whether money is an autonomous creation of the exchange economy or whether it must be described in terms of law and political science as an instrument devised by the state and imposed upon economic society from without. It is significant that recent British, and to a lesser extent American, monetary theory has absorbed much of the terminology, if not of the thought, of the school which is based upon Knapp's state theory of money. Before the subject of monetary systems is approached therefore, it is necessary to inquire into the relationships which may obtain between the state as a legislative and executive mechanism and monetary institutions in the widest sense of the term.

The state can influence the monetary system of a community in a variety of ways. In the first place, all objects which correspond to the popular idea of money are usually issued by the state or their issue is regulated by it. Thus the action of the state is very important as regards those classes of money which in this discussion are described as currency. In the second place, the legislative powers of the state can be invoked, first, to change the unit of account from time to time, e.g. the change from gulden to kronen in Austria-Hungary, from thaler to marks in Germany and the revision of the units in the case of many of the post-war currency restorations; secondly, to determine the legal tender capacity of coins; thirdly, to regulate the terms of contracts upon a change of standard, e.g. upon the transition from a gold to a paper standard and vice versa, including under this head the important but largely overlooked power to construct sliding scales to determine the relative position of debtors and creditors when a currency is being stabilized after a period of rapidly changing prices. In the third place, the state can affect the value of the particular kind of material out of which money can be made by deciding whether it should or should not be used as currency material; there can be no question, for instance, that the general abolition of the gold standard would result in a serious deterioration in the value of gold; and the closing of the mints to the free coinage of silver must have affected the value of silver. Furthermore the state can influence the value of a particular species of money by increasing or decreasing its quantity. But the last point already shows the real limitations upon the powers of the state in the sphere of currency policy. The state cannot, by virtue of its sovereign power, escape the consequences of its own action; the results depend upon the nature of those actions and not upon the fact that it is the state which so acts. It is certainly not true that the state, merely by issuing a coin and declaring it to be "money," can give it a determinate value in terms of goods. Nor is it true that the state can act in an absolutely unhampered way in its choice of mon-

etary material. The fact that the value of a paper currency in periods of inflation falls more rapidly than its quantity increases is merely a special instance of the general truth that money, in order to act as a medium of exchange, must be generally acceptable. If the state attempts to force upon the exchange economy a money which is not acceptable it is likely to fail. In any case the view that the express sanction of the state is necessary before that which is generally recognized as money can come into existence is clearly contrary to the facts. The most that can be said is that in the evolution of monetary institutions the regulatory action of the state has been a most powerful influence, both for good and for evil. But this by no means confirms Knapp's contention that "the soul of money lies, not in its material content, but in the legal system [*Rechtsordnung*] which regulates its use." There may be no such legal system; and where such a system exists, it may be powerless to prevent a fall in the value of money and a consequent decline in its acceptability.

MONETARY SYSTEMS. By a monetary system is meant an organic complex of types of money, the word organic being used to indicate that there are definite relations of value between the individual types which in the aggregate constitute the system. These value relationships have two aspects: formal and substantive. The formal aspect is provided by the circumstance that each type and kind of money in the system stands in a definite relation to the unit of account, being either a multiple or a submultiple of it. The substantive aspect consists in the fact that there may be at work forces which disturb the practical possibility of realizing these formal relations; the possibility of such realization is part of the problem of the internal parity of a monetary system. The system as a whole may also be confronted, however, by a problem of external parity; that is, of maintaining the value of the unit of account in terms of some external index or standard. The classification of monetary systems turns upon this point, namely, the standards with which such systems may be associated; and it is important to remember that there may be no such objective standard to which is referred the unit of account to which all the types within the system are related. These considerations lead to a formal classification of monetary systems as presented in the following chart. The classification is based upon two criteria: first, whether any arrangement exists by virtue of which the value of that component of the system to which the value of the remaining portions are adjusted is itself linked with some external object; and, second, the method

CLASSIFICATION OF MONETARY SYSTEMS

	SUBSIDIARY UNITS LINKED THROUGH THE UNIT OF REFERENCE TO			
NO EXTERNAL VALUE	SOME EXTERNAL VALUE			
	ANOTHER CURRENCY	ONE METAL	TWO OR MORE METALS	OBJECTS OTHER THAN METALS
1. Freely issued inconvertible paper standards 2. Pure limping metallic standards	3. Exchange standards	4. Metal freely minted into freely exportable and meltable coins (monometallism) 5. Amount of currency limited to assure equivalence of unit of account with the amount of metal it represents (de facto monometallic stabilization) 6. Currency convertible into metal on demand and in unlimited amounts (metallic exchange standards)	7. Both metals freely minted into exportable and meltable coins, neither being legal tender (parallel currencies) 8. Both metals freely coined, but mint ratio periodically revised 9. Both metals legal tender (bimetallism)	10. Currencies whose value is managed through limitation of issue (index standards)

by which such external linkage occurs. In practise this second distinction is of great importance since slight changes in the method of adjustment will convert one system into another. Thus an inconvertible paper money system becomes convertible into an isometric system without any change in the internal arrangements, through limitation of amount in accordance with the movements of an index number. A parallel standard becomes converted into a bimetallic standard merely by conferring full legal tender quality upon the standard coins. A monetary system in which the value of the unit of account is kept at par with a metal by limitation of amount becomes convertible into the familiar bullion or exchange standards as the unit can be used to acquire legally a fixed weight of metal, and can in turn be acquired by the presentation of the metal to an appropriate institution (conversion office or central bank). In effect, however, each of these various currency systems falls under one of four main heads: free standards; index or isometric standards; monometallic standards; multimetallic standards.

An examination of the various systems, not with regard to their logical or formal relation to one another but from the practical point of view, brings out three questions: the geographical and historical distribution of these systems; the effect upon the value of the precious metals, and upon the systems themselves, of different methods of adjustment; and the rationale of methods of control over the quantity of the media of exchange. The development of the monetary systems during the nineteenth century proceeded in a twofold direction. In Europe the creation of unified national states led to the emergence of relatively few monetary systems, based in general upon the principle of the free and unlimited mintage of gold, with subsidiary silver, nickel and bronze coins limited in amount and with banknotes freely convertible into gold. In this way the concept of the "ideal" monometallic gold standard was gradually evolved; nearly all the currency reforms of that century followed this trend. Even where, as in Austria-Hungary after the reforms of 1892, paper was not legally convertible, gold was freely obtainable; and as the existence of a paper standard was traditionally associated with unbalanced budgets and economic backwardness, financial opinion and economic theory alike were hostile to it. In the colonial world the currency systems gradually tended toward the exchange standard type, but these exchange standards were all based upon gold. In the course of this almost universal transition a revolution had occurred, the full extent of which is not always appreciated. It involved not only the elimination of silver monometallism over a large part of the world but the practical disappearance of: bimetallic systems; systems in which silver was the standard but in which gold was periodically "re-rated" in terms of the standard metal (the failure adequately to re-rate gold at the beginning of the eighteenth century was the prime cause of Great Britain's transition to a de facto gold standard); and parallel currencies. The revival of the bimetallic agitation after prices began to fall in the 1870's and the preoccupation of economists with the mechanics of this particular form of associating gold and silver have prevented a due appreciation of the diversified character of the systems which were almost universally replaced by gold monometallism. In the course of the change from silver or paper to gold there appeared in certain cases a form of intermediate currency system of great scientific interest in which the value of the currency depended upon the growth of the demand for a predetermined stock. Thus, after the closing of the mints to the free coinage of silver in India, the silver standard was not immediately replaced even by a de facto gold standard; the value of the stock of rupees varied with demand. There was a stage in the history of the German currency reforms when the free coinage of silver was stopped before gold coinage began. The rise in the (silver) value of the Austro-Hungarian and Russian paper currencies of the 1870's also led directly to the closing of the mints to silver, before the gold standard had definitely been introduced. The present position is very different. Over a large part of the world the gold standard has ceased to function in any form (South America, the British Empire, Scandinavian countries). Elsewhere, as in central Europe, it is formally maintained but exchange restrictions and regulation of imports have robbed it of real significance as the instrument for the maintenance of a closely integrated international price and income structure. Even before its collapse the "ideal" gold standard of the nineteenth century gave way, in the years 1925 to 1929, to variants of the exchange standard: gold coin largely ceased to circulate even in the countries where the old gold standard still nominally existed, and elsewhere the external value of the currency was maintained either by sales of bar gold in minimum amounts so large

as to prevent a general demand for it (the British gold bullion standard) or by sales of foreign exchange on gold standard countries as an alternative or complement to the actual release of gold. The free paper standard has ceased to be unpopular, while the gold standard is near bearing the brunt of popular criticism.

Given an effective metallic standard, i.e. free convertibility of metal into coin and of coin into freely exportable and meltable metal, the value of the metal and the coin cannot differ by more than the coinage charge, if any, imposed by the mint. Alternatively, given an effective bullion standard, the value of the metal in the bullion market cannot be less than the price offered by the central bank or conversion office or greater than the selling price for bullion charged by the same authorities. In terms of commodities also, the purchasing power of bullion and the coin made of it and the purchasing power of the currencies for which it is freely salable and freely obtainable must also be the same. But all this is not equivalent to proof that the net effect of different systems, so far as the purchasing power of the metal and of the media of exchange connected therewith is concerned, is the same. Any system which contains a fiduciary element must reduce the value both of the metal and of the currency: the purchasing power of both the metal and the currency will continue to be identical but will be lower than it would otherwise have been. Thus, where coins of the standard metal alone circulate, the purchasing power of the metal and the coins will be higher than where the currency also comprises token coins of baser metals and higher still than where paper money, not fully covered by the standard, is superadded to the system. If the whole world adheres to the same metallic standard, the effect of a change of system by any one country is not likely to be marked; although methods of economizing the metal have the general tendency to lower its value over the whole of the currency area, and vice versa. The ultimate effect of the recent abandonment of the gold standard by so many countries must be to lower the value of gold in the remaining parts of the world; while, other things being equal, a general restoration of the gold standard would cause a rise in the purchasing power of gold, although these effects could be counteracted by increasing gold economy or by an accelerated production from the mines.

The existence of a metallic standard itself affords some protection against overissue, but the extent to which it does so may be overestimated. The mere linking up of the currency systems of the world with gold does not prevent the value of the currency and of gold from falling, if there is concerted inflation; that is, a common increase in the fiduciary elements of the currencies. Moreover, as the gold discoveries in California, Australia and South Africa showed, there may be dramatic changes in the stock of gold available. The existence of a metallic standard in a single country, given an unchanged metallic supply, would not prevent a drastic rise of prices there, if the rest of the world abandoned the metal in question. As regards any single monetary system, limitation of issue and therefore the avoidance of the danger of depreciation are secured by convertibility of the local currency into the metal, while the danger of appreciation is avoided by the conversion of the metal into the local currency, both appreciation and depreciation being relative to the purchasing power of money elsewhere. But the maintenance of a local metallic reserve is not in itself a means of preventing local depreciation: the metallic reserves maintained against an inconvertible currency exercise no influence on its value, except possibly a psychological one. Reserves are significant only because they enforce restriction of issue, but restriction of issue would keep up the value of the monetary system even if there were no reserves whatever. The value of convertibility lies in the fact that it forces the monetary authority to restrict the total volume of currency, for otherwise it runs the risk of losing its reserves. The function of the reserve is to buy back the local currency and thus to keep up the value of the outstanding amount. In the case of a reserve equal to 100 percent of the outstanding currency, the significant factor is not that the reserve is fully equal to the total volume of currency but that the reserve requirement has limited the growth of the total volume.

Other methods of controlling the fiduciary elements of a currency system are: the fixing of a limit to the total of the fiduciary circulation, as illustrated in the British note issue; the establishment of a minimum ratio below which the reserve cannot fall, as practised in the United States and in most other countries; the maintenance of the metallic reserve at a minimum absolute amount together with a maximum amount of the fiduciary circulation, as proposed by the Macmillan Committee as appropriate to the circumstances of Great Britain; and, finally,

the setting of a limit to the total amount of notes, covered and uncovered, which can be issued but allowing the reserve to vary freely, as exemplified by the pre-war French system. The preoccupation of legislators with the question of permitting elasticity to the fiduciary portion of the note issue, as evidenced in the provision in the charters of so many central banks for a reduction of the reserve below the statutory ratio on payment of a tax on the excess, has prevented a due appreciation of the vital fact that the absolute size of the reserve is much less important than the due limitation of the total available means of circulation within the community.

THE PURCHASING POWER OF MONEY. Any theory purporting to deal with the problems of money must confront the question of whether money possesses any value and, if it does, how its value is determined. It is of course possible to assert that as money is only a symbol it cannot possess the attribute of value, although even this assertion leaves open the question as to whether the physical embodiments of the symbol possess value. Inquiries into the purchasing power of money are themselves not free from ambiguity unless they distinguish between the reasons why money possesses value at all, the measurement of that value and the conditions which cause that value to change from time to time. The first question has received relatively little attention in Anglo-American monetary literature. It has been usual to point to the fact that the value of money is derivative: "money as such has no utility except what is derived from its exchange-value, that is to say from the utility of the things which it can buy" (Keynes, *Monetary Reform*, p. 82); Irving Fisher's statement that the quantity theory rests ultimately upon the "fundamental peculiarity . . ." that money "has no power to satisfy human wants except a power to purchase things which do have such power" (*Purchasing Power of Money*, p. 32). Nevertheless, even if the value of money be supposed to be purely derivative, the statement is not adequate as it does not sufficiently differentiate money from other instrumental or intermediate products, such as machine tools, whose exchange value rests also upon their power to furnish their owners with things capable of satisfying human wants, although they cannot do so directly. There is, however, general agreement that the value of money is measured by its de facto command over goods and services and that changes in such exchange value can be stated most easily in the form of index numbers, which, as they express alterations in the level of prices, reveal the reciprocal of changes in the purchasing power of money. But there is now no agreement as to the best method of formulating the causes which alter the purchasing power of money from time to time. This was not the case before the revival of monetary controversy during and especially after the World War. In English speaking countries at least, a single theory of the causes determining changes in the purchasing power of money—the quantity theory—dominated the field. Marshall's attempt to restate the problem of variations in purchasing power in terms of a varying desire to hold money did not weaken the grip of the quantity theory and Friedrich von Wieser's attempt to state the same problem in terms of changes in the volume of money income also failed to attract attention at the time. It is formulations of this kind which attract most attention today, and the reason for the change must be sought in the circumstance that the quantity theory does not fit as easily as these newer theories into a marginalist analysis of exchange value.

The quantity theory, in its barest form, is the application to the field of monetary theory of the supply and demand explanation of prices: quantities of money are contrasted with quantities of goods. It is true that the precise formulation of the quantity theory allows for the fact that the same unit of money may figure in more than one transaction and that the same unit of goods may constitute the content of more than one sale; hence the introduction of a multiplying factor on both sides of the account—the "velocity of circulation" of both goods and money. This refinement is, however, no more than an elaboration of what is essentially a supply and demand explanation of price. Moreover, just as the general theory of supply and demand is closely associated historically with cost of production theories, so the quantity theory can fit in easily with an explanation of changes in the value of money resting ultimately upon the concept of the cost of production (whether real, labor or money cost) of the material of which money is made. In the nineteenth century, when metallic standards prevailed generally, the difficulty of applying a cost of production theory to inconvertible paper money in any realistic way was not an insuperable obstacle to the acceptance of the cost of production point of view.

It was inevitable that, sooner or later, the

marginalist analysis of value should be applied to the case of money, and that with it there should come a critical reexamination of the view that the elasticity of demand for money is always unity and consequently that prices are always directly proportional to the quantity of money. But the marginalist view meets with one preliminary difficulty. In the case of commodities it is clear that the market value of the commodity depends ultimately upon the significance of the commodity to the consumer: objective values flow from the subjective estimates of individuals. It has, however, been urged against the application of marginalist theories of value to the case of money that what is true of commodities in general is not true of money, for the estimates put upon money by individuals depend upon rather than determine its objective value. Unless money possessed purchasing power, individuals would have no reason to hold it: the logical sequence is thus from objective value to subjective value, and not, as in other cases, from subjective to objective. Considerations of this kind have led some writers to hold that "money is a third category, in addition to consumption goods and capital goods," because marginalism is true of commodities but is not true of money. This line of argument is merely a restatement of the Fisher-Keynes point of view already mentioned. One method of meeting the objection is that employed by von Mises in his attempt to explain how money acquired any objective value. In detail his argument is based upon the principle of historical regression: although at any given moment one must assume that money has some purchasing power (objective value), yet "this value which has to be assumed is not the same as the value which we have to explain; it is the exchange value of yesterday, while it is our task to explain the exchange value of today. The objective exchange value of money which exists on the market today is formed out of yesterday's market value under the influence of subjective estimates of the frequenters of the market, as that of yesterday arose out of the play of subjective estimates round the objective value of the day before yesterday, and so on. If we go back continually in this way, we necessarily reach a point where we no longer find in the objective value of money any component which arose out of such valuations as are connected with the functions of money as the universal medium of exchange, where the value of money is nothing more than the value of an immediately useful object. This point is not a mere conceptual aid to theory; it existed in economic evolution at the precise moment when indirect exchange arose" (*Theorie des Geldes*, p. 100–01).

It is now possible to classify the various theories concerning the causes that determine the changes in the purchasing power of money. They fall into three main groups: cost theories, which may be subdivided into cost of production and labor cost theories; quantity theories, which may be further divided into those derived from supply and demand theories of value and those attributing to money a position as a special economic category with unit elasticity of demand; and the marginalist theories. The last group comprises the cash balance or holding theories as represented by von Mises, Marshall, Cannan and Pigou; the income theories held by von Wieser, Hawtrey and Aftalion; income theories with eclectic elements as represented by Keynes; and, finally, theories based upon eclectic views of price as held by Cassel.

It has become customary to express in algebraic form the relations between the various magnitudes involved in the determination of the purchasing power of money. Such a formal expression is useful in so far as the operative factors regarded as significant are clearly stated thereby; but such an "equation of exchange" is nothing but a summary of the logical basis of a particular point of view and does not prove that that point of view is itself correct. The quantity theory, in the shape given to it by Irving Fisher, its foremost representative, is stated algebraically thus:

$$MV + M'V' = \sum pQ$$

or $MV + M'V' = PT$, from which

$$P = \frac{MV + M'V'}{T}.$$

M and M' are the quantities of hand to hand currency and V and V' their respective velocities of circulation; P is the price level and T the volume of transactions. The price level is regarded as directly proportional to changes in the volume of money and of velocity and as inversely proportional to changes in the volume of transactions. Fisher, however, regards his formulation as being strictly true only of so-called "normal periods" and, while in general the various factors are regarded as independent variables, a change in T may bring about changes in V and V', so that the effect of changes of T upon the price level is not predictable. The in-

come theory of prices has been given an algebraic formulation by Hawtrey; the significant magnitudes are: "consumers' income" expressed in terms of money; "consumers' outlay" similarly expressed; "the unspent margin," the net difference between income and outlay; and changes in output (including finished capital goods). If B represents consumers' income, b and b' an increase in consumers' income and outlay respectively, X production and x and x' an increase in production and consumption respectively, P the level of prices and p an increase of prices, then:

$$(B + b) = (P + p)(X + x)$$
$$(B + b') = (P + p)(X + x'),$$

so that: $b - b' = (P + p)(x - x')$,

from which: $P + p = \frac{b - b'}{x - x'}$.

The cash balance or holding theories may be illustrated from the formulations given by Pigou and by Keynes (although the latter has now advanced from his original position):

$$P = \frac{kR}{M} \qquad \text{or}$$

$$P = \frac{kR}{M}\left[c + h(1 - c)\right].$$

In Pigou's formulation R stands for total resources accruing to a society in a given period of time, k for the proportion of these resources which individuals choose to hold in a liquid form and M for the quantity of money. The expanded formula takes account of the distribution of this unspent margin between "cash" and "credit balances," c being the proportion kept by the public in cash, and h the proportion of bankers' cash to their deposits. Keynes' original formula, as he himself points out, is only a derivative of the above "Cambridge" equation: $n = p(k + rk')$, "where n is the total quantity of cash, r the proportion of the banks' cash reserves to their deposits, and p the price of a consumption unit," k and k' being the volume of reserves which the public desires to hold in a liquid form, either in cash or in bank deposits.

It is possible to criticize various theories of the purchasing power of money on two distinct grounds: first, that they may be based upon an inadequate conception of what is meant by the purchasing power of money and, secondly, that they fail to reveal what are the really important causal factors determining purchasing power however it be defined. Thus it has long been urged against the quantity theory, particularly by continental writers, that it is purely mechanistic: it really states that changes in the volume of money bring about alterations in the price level, but it does not explain the phenomenon. It is the great merit both of the cash balance theories and of the income theories that they bring into the foreground the causal elements involved: a change in the desire to hold money may bring about a change in the price level even without any change in the supply of means of payment; alternatively, an increase in the stream of money income will have a greater or lesser effect upon the level of prices according to whether the increased money resources placed at the disposal of consumers result in additional expenditure, i.e. increased "consumers' outlay," or whether they are added to the "unspent margin," i.e. are neutralized because of the desire of the public to hold larger balances. It is, however, necessary to supply in detail the reasons why it is desirable to hold larger or smaller balances at one time or another, and to explain how an increase in the stream of money income can take place. But, given a fixed supply of means of payment, increased outlay simply means a diminished average balance, while an increase in the average balance involves a diminution of outlay. An increase in the volume of means of payment is due either to increased borrowing by the business community or increased (uncovered) expenditure by governments. It is clear that it is easy to pass from one theory to the other; the general idea is the same, although the emphasis is different.

The latest formulation of the problem by J. M. Keynes is intended as an attack upon prevailing theories from two angles. Keynes believes that the indices hitherto employed to measure the purchasing power of money do not in fact do so; he proposes that the term "purchasing power of money" be henceforth confined to designating the command of money over "all the items which enter into final consumption" and that the index number representing this command be "weighted in proportion to the amount of their money-income which the consuming public devote to them" (*Treatise on Money*, vol. i, p. 57). As regards the forces which determine the command over money, either over consumption goods or over output in general, Keynes draws attention to the influence exerted by a failure of the volume of money savings to

correspond at all times to the volume of new real investment, by which he understands the net addition during a given period of time to the capital wealth of the community. His "fundamental equations" thus link up prices (whether of consumption goods or of output as a whole) with four terms: the money earnings of the community, i.e. cost of production; the output; the volume of money savings and the cost of new investment (in the case of the price level of consumption goods) or the value of new investment (in the case of output as a whole). Where money savings equal cost of new investment or value of investment respectively, the price level will be determined simply by earnings in relation to output. Now earnings and output very closely resemble Hawtrey's income and production and the significance of the new doctrine turns largely upon the importance of this factor: the relation between savings and investment. The causes which lead to a divergence between the two must be sought outside the terms included in the fundamental equation, as must also the causes which lead to variations in earnings and output, in so far as changes in these factors are not caused by changes in savings and investment.

Monetary Problems of the Present Time. The accretion of economic knowledge and of administrative experience has apparently disposed forever of some of the problems of money which in the past have caused much trouble. The issue of media of exchange is almost everywhere in the hands of the central government and the central bank and, where the right of banknote issue is retained by commercial banks, it is safeguarded by the law. The issue of subsidiary and divisionary currency no longer presents difficulty, now that it is understood that limitation of issue and legal or de facto convertibility are necessary to prevent overissue. The number of independent currency authorities, although it has increased since the World War, is much smaller than during the greater part of monetary history and attempts to profit at the expense of the public by petty misconduct in the administration of the currency belong to a bygone age. On the other hand, no agreement exists on matters of even greater moment; in the modern world the monetary problems awaiting solution concern both the nature of the monetary standard and the objectives of monetary policy. While these matters are related, they are not coincident. The question of monetary standards is to a large extent influenced by the desire for economic self-determination irrespective of monetary ends; and the disputed ideal of stabilization is not necessarily dependent upon the choice of any particular monetary standard, provided there is general agreement upon the end to be pursued.

The general trend of events during the fifty years before the war was toward the internationalization of the gold standard. Such a development accorded well with the immense growth of international trade and finance which characterized the period. After 1896 it was not inconsistent with a gradual rise in the world level of prices and was thus not unpopular with the business classes; its ever growing extension was in itself a justification for adherence to it. Moreover an international standard imposes limits upon the wilful maladministration of the monetary system by any single country—the price paid is the loss of reserves and a fall in the external and sooner or later in the internal value of the currency. In a period in which the moral position of the creditor and of creditor nations was much stronger than it is today, adherence to such an international standard was almost obligatory upon countries which desired to borrow freely from the great money markets. These lessons of the nineteenth century seemed to be reenforced by the experiences of the period 1914 to 1925. The destruction of the international standard was accompanied by the conscious use of the printing press as an instrument of governmental finance, and the inflation which ensued resulted in the destruction of the rentier and middle classes over a large part of Europe. In the end the rapid depreciation of the currencies concerned deprived even the governments desirous of profiting from the wiping out of debt, as well as the entrepreneurs who exploited the facts of the situation, of any desire to continue the inflationary policy. The result of the inflationist debauch was the almost universal reintroduction of the gold standard in the years 1925 to 1929. In the short run this policy was undoubtedly successful. The restoration of the international gold standard accompanied, if it did not cause, a marked upswing in world production and trade and was one of the conditions basic to the great growth in the volume of international lending which characterized those years. The collapse of the world boom, particularly the collapse in the United States, destroyed the recreated gold standard and forced a reconsideration of its merits and demerits. Because of the appalling distress occasioned by the fall in

the value of money, the fact was overlooked that the monetary standard was capable of being threatened from another flank; in other words, too great pressure upon the debtor class in times of falling prices would be equally likely to upset belief in the virtues of the standard.

From the standpoint of any single currency area, an independent paper standard has the advantage in that it enables the area in question to overcome the problem of a rigid level of costs more easily than it could with a fixed exchange; for however rigid the cost level may be, a further fall in the rate of exchange will enable it to sell its products in competition with the countries whose cost structure is more elastic. Again, the presence of an independent paper standard removes most of the difficulties associated with the concept of an "unbalanced" balance of payments. A falling exchange will check imports and encourage exports —although how far the exchange will fall in order to bring about the adjustment will depend upon the relative elasticity of the demand for imports and exports respectively. Thus the risk is that the fall in exchange may have to be so great as to cause a sharp rise in the internal level of costs, as a result of the increased cost of imports; and a sharply falling exchange may create distrust in the future of the currency, thus setting up a cumulative tendency to a further fall and inducing a "flight from the currency" which may prove very difficult to manage. An independent paper standard, however, does not itself solve the problem of the price policy to be pursued in so far as the level of prices is regarded as dependent upon currency management. What an independent standard does in this regard is to make an independent policy possible. Thus the aim is to stabilize the internal price level; the fact that the exchange is flexible is a condition of success at a time of falling world prices. The rise in the cost of imported commodities must be allowed for by a slight lowering of the price level of domestic products, but the policy is not dependent upon the good will or the cooperation of other currency authorities.

The dangers which the universal adoption of independent standards involves are that such a step would encourage the already strong tendencies toward economic nationalism; that it would bring about perpetually fluctuating rates of exchange; and that it would at any moment of difficulty facilitate the abuse of the printing press by governments. These dangers could in part be avoided if there were general agreement to peg paper rates of exchange on, for example, London and New York, and if these centers were to pursue a currency policy approved by the rest of the world. Such an outcome of the present situation is not very likely; but it is possible, although not probable, that a common policy may evolve for the area at present either directly upon the pound sterling or with the exchange rates more or less pegged to sterling. The difficulty is that the forces which have driven so many raw material states off gold may encourage a further decline in their exchange rates. But the vitally important point is that the existence of universal paper standards threatens an indefinite continuance of chaos in the monetary affairs of the world unless agreement is reached as to general price policy. But such an agreement would make an international adoption of paper unnecessary, for the same ends could then be reached under an international gold standard. Even if this were impossible, it would not follow that the gold standard is the less preferable, for adherence to it would at least solve the problem of fixity of exchange.

That the gold standard does not guarantee stability of prices is clear from the whole history of the later nineteenth and the earlier twentieth century, a period not complicated by the extraneous factors present since the World War. It is no part of the case for the gold standard that it of necessity guarantees such stability. Putting the point somewhat differently it must be asked, first, whether stability of prices is the right objective of monetary policy and whether, if it is, the gold standard is an insuperable obstacle to its attainment; second, whether, if some kind of instability of prices does not constitute an obstacle, the gold standard can be so worked as to prevent instabilities of the kind still deemed undesirable; and, finally, whether, even if the kind of instability accompanying the gold standard falls outside the category deemed desirable, its net effects are preferable to those which may ensue from any alternative likely to be adopted.

In the opinion of the writer, there is no reason to suppose that absolute stability of the level of prices, whether wholesale or retail, should be the aim of currency policy. The tendency of increasing productivity should be in the direction of falling prices; and provided that prices do not fall at a rate greater than productivity increases, there is no reason to fear that industrial depression or unemployment will follow. It is not impossible, however, so to work the gold standard as to provide a stable level of

world prices, if this is desired. That prices have fallen in the years 1930 to 1932 to a level far below the point which increasing technical knowledge would justify is clear from the continuance of the depression which set in in 1929; as a result, the burden of interest charges combined with the rigidity of costs has forced the greater part of the world off the gold standard. But it is by no means true that the extent of the fall is a direct consequence of the existence of the gold standard. To prevent a fall of prices of this magnitude it is necessary to prevent a boom of the previous magnitude. The prevention of boom conditions is not, as the world now knows to its cost, a matter of watching the level of prices. The experience of the United States in the period from 1925 to 1929 has shown that a quite remarkable stability in the level of wholesale prices is consistent with the development of underlying conditions which eventuate in a depression of the gravest kind. The prevention of booms is a much more complex task, and there is no ground whatever for the supposition that such a task is inherently less difficult under a regime of paper than of gold.

It is true that there are present in the post-war world elements of friction which do not spring from the existence of the gold standard but which can undoubtedly hamper its working. Costs are more rigid than they were because of the growth in the power of trade unions and trade monopolies of many kinds. The volume of fixed interest bearing debt has greatly expanded and the rights of creditors are less tenderly regarded; the international financial mechanism is being exposed to a new force in the shape of an immensely swollen international short loan fund. These extraneous factors undoubtedly hamper the work of adjustment, once the mechanism is allowed to get out of gear. A successful working of the gold standard thus involves to a greater extent than before the war the use of the power of central banks to prevent the development of credit conditions in periods of upswing which will make the depression, when it comes, more deep seated than need be the case if earlier action is taken. The solution of the problem of controlling cyclical variations is, however, common both to the gold standard and to the paper standard. If gold is to be preferred on other grounds, the problem of controlling cyclical fluctuations constitutes no definite and final objection to the restoration of gold.

T. E. GREGORY

See: FINANCIAL ORGANIZATION; CURRENCY; COINAGE; PAPER MONEY; GOLD; METALS; BIMETALLISM AND MONOMETALLISM; CREDIT; BANKNOTES; ASSIGNATS; BILLS OF CREDIT; BANK DEPOSITS, GUARANTY OF; CHECK; MONEY MARKET; CALL MONEY; FOREIGN EXCHANGE; AGIO; MONETARY UNIONS; MONETARY STABILIZATION; PRICE STABILIZATION; COMPENSATED DOLLAR; CENTRAL BANKING; CREDIT CONTROL; INFLATION AND DEFLATION; DEVALUATION; INDEX NUMBERS; VALUE AND PRICE; BULLIONISTS.

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MONEY MARKET. A money market presents the aggregate of facilities through which short term funds are loaned and borrowed and through

which a large part of the financial transactions of the country or of the world are cleared. It is a center where money seeking temporary investment is accumulated and made available to members of the business and financial community who desire short term accommodation. Conceived broadly a money market includes the entire mechanism employed in financing business of all types. In the narrower sense in which the term is generally used, however, it covers only dealings in more or less standardized types of highly liquid loans, such as call loans, and credit instruments, such as acceptances and treasury bills, in which personal relations between lender and borrower are of negligible importance. In this sense the money market is distinct from and supplementary to the commercial banking system. The standardized forms of short term investment are provided by the acceptance market, the commercial paper market, the short term treasury bill market and the call money market. The commercial paper and the acceptance markets utilize these short term funds for the purpose of financing domestic and foreign trade. The short term government security market employs the funds to finance the operations of the government, while the call money market is used exclusively to facilitate marginal trading on securities already outstanding in the market or to facilitate the issue of new securities before they have reached the ultimate investor. The money market thus consists of a number of divisions and subdivisions, each devoted to a particular type of credit operation and each constituting a separate market in itself, although the various separate markets are closely interrelated and mutually affect each other.

Although a distinction may be made between the money market dealing primarily in short term credit transactions and the capital market engaged in financing the long term capital requirements through the sale of securities and bonds, in practise the two are very closely related and transactions originating in one market are often completed in the other. Capital transactions, such as the flotation of securities, are frequently financed by means of short term loans obtained in the money market; and payments of interest and dividends on securities, although they originate in capital transactions, have the same effect on the money market as the redemption of commercial paper or the paying of outstanding acceptances. On the other hand, short term loans are often obtained in the money market in anticipation of the sale of securities in the capital market and are liquidated out of the proceeds of a long term capital transaction. Similarly, trading in securities already outstanding, particularly margin trading, depends almost exclusively upon short term credit obtained by the brokers from the banks. There is also a very close connection between the money market proper and related markets, such as the commodity markets, the foreign exchange markets and the shipping and insurance markets. It is these related markets which provide the opportunities for investment of the funds in the money market; the demand for funds arises from these sources. Thus, for example, the position of London as perhaps the most important international money market in the world is due to the fact that London has been for decades the world's greatest capital market, the center for world trade in staple commodities and perhaps the greatest shipping and insurance center. All these activities require short term financing, and it is on the basis of this demand that the London money market has developed to its present status.

Since the principal money markets have developed in response to the credit needs of the respective economic regions, the structure and operation of such markets vary from country to country. For example, in New York up to 1930 the call money market was dominant, while London, for a long time the center in financing international trade, developed the acceptance market as the principal subdivision of the general money market. In post-war years, however, important changes have taken place in the London market, and today the treasury bill market rivals the acceptance market in importance. In continental European financial centers, such as Paris and Berlin, trade bills arising out of domestic commercial transactions and bearing two or three signatures have been and still are the most important instrument of the money market.

While it is impossible clearly to distinguish between borrowers and lenders, since an institution may at one time be a borrower and at another time a lender, the following classification indicates the usual position of the chief types of institutions. On the lenders' side the most important institutions are the central bank, commercial banks and business enterprise. The central bank is the ultimate source of credit. In the United States the credit of the Federal Reserve Banks, except under provision of recent emergency legislation, is extended only to the member banks. The Bank of England is free to

do business with anyone, but as a matter of fact it deals chiefly with the bill brokers and joint stock banks. In contrast, however, to the United States, where the Federal Reserve Banks extend credit directly to the member banks, in London the joint stock banks almost never borrow directly from the Bank of England and the influence of the central bank is exercised through the bill brokers. Whenever the joint stock banks are confronted with an increased demand for cash they call their loans from the bill brokers, thereby forcing the latter to borrow from the Bank of England. On the continent the central banks usually conduct a general banking business and deal with the public as well as with banks through a more or less extensive system of branch offices. In some countries, particularly France and Belgium, the central banks deal more with individuals than with banks.

The commercial banks constitute the most important single class of lenders. In the United States they occasionally appear as borrowers of federal funds or sell bankers' acceptances to the Federal Reserve Banks. The manner in which the commercial banks place funds at the disposal of the money market differs in various countries. In the United States before the World War the call market and to a lesser extent the commercial paper market were considered as the most important outlets for short term funds. During the post-war period the development of the acceptance market has provided a new medium of short term investment and still more recently short term treasury bills and notes have become the most important outlet for bankers' short term funds. In England the joint stock banks put funds in the money market chiefly in the form of loans to bill brokers and discount houses, but also by purchase of acceptances and treasury bills. On the continent the chief outlet for funds of commercial banks consists in the purchase of trade bills bearing two signatures. Upon the endorsement of such bills by the banks they become eligible for discount at the central bank.

Business enterprises, such as great corporations and particularly insurance companies, often appear as large lenders of money. During the stock market boom in 1928 and 1929 several billions of dollars of such funds were loaned on call to brokers and dealers in New York through the agency of the commercial banks. Since the latter part of 1931, however, the large New York banks have refused to make loans "for the account of others," and the amount now outstanding is insignificant. In London the surplus funds of the big corporations and insurance companies are often used for the purchase of acceptances and thereby create a continuous demand for such credit instruments. In post-war years the use of treasury bills has to some extent replaced the use of bankers' acceptances.

The borrowers in the money market comprise stockbrokers, bill brokers, investment houses and the government treasury. In the New York money market the stockbrokers constitute the most important group of borrowers in normal times, while in London the chief borrowers are the bill brokers, or dealers in bankers' acceptances and treasury bills. This perhaps more than anything else indicates the fundamental difference between the London and New York money markets. In London the bill brokers borrow money on call or on short notice from the joint stock banks and purchase bankers' acceptances with the proceeds of these loans. Their profit consists in the difference in the rate of interest which they pay to the joint stock banks and the rate on prime bankers' bills. The loans obtained from the joint stock banks are secured either by treasury bills, bankers' acceptances or, to a much lesser extent, by long term government bonds. In New York the stockbrokers borrow from the banks, pledging stocks or bonds as collateral, for the purpose of financing the purchase of securities on margin. The loans may be payable on call or may be contracted for a definite period of time, usually thirty to ninety days. In London the rate on loans at call or short notice which the bill brokers obtain from the joint stock banks stands in a definite relationship to the discount rate of the Bank of England; the former can never go above the latter as the bill brokers have recourse to the Bank of England, which stands ready to discount their acceptances at the official discount rate. In New York, on the other hand, the securities which the brokers pledge as collateral for security loans are not eligible for discount or purchase at the Federal Reserve Banks. Hence there is no definite connection between call loans and the discount rate, and often, particularly in times of active security trading, the call rate is substantially above the official discount rate of the Federal Reserve Banks. The fact that the most important open market in London, the bill market, has direct access to the Bank of England, gives the London money market a greater degree of liquidity than that prevailing in the United States, where the liquidity of the security loans depends primarily upon

the marketability of the securities offered as collateral for loans.

Although investment banking houses at times place large sums at the disposal of the market either in the form of call loans, as is the case in the United States, or by purchasing acceptances and treasury bills, as is the case in London, they are more often borrowers than lenders. Investment banking houses appear as borrowers for the purpose of carrying securities which they have underwritten or which they have acquired in the open market. Such loans do not differ from those made to brokers; they are secured by collateral and may be contracted on a call or time basis.

In countries where the money market is well organized, governments frequently appear as heavy borrowers of short term funds. In the United States government borrowing assumes the form of the sale of treasury notes with a maturity of one to five years, of certificates of indebtedness with a maturity of thirty days to one year and of treasury bills which have similar maturities. In London in post-war years the Treasury has made it a practise to issue every week a certain amount of treasury bills, usually about £40,000,000, which are absorbed by the open market. To a considerable extent therefore money market conditions in London are affected by the amount of treasury bills offered and redeemed. It is obvious that when the Treasury redeems more bills than it offers, money rates will go down, and vice versa, when a greater demand upon the money market is made by the Treasury, there will be a tendency for rates to rise. Short term treasury bills and certificates of indebtedness played a less important role in the New York money market until 1930, but by the end of 1932 the amount of short term government securities outstanding was greater than that of any other type of short term credit instrument.

In addition to the principal borrowers in the open market there are a number of types of institutions which either regularly or occasionally appear as borrowers in the open market. These include corporations which obtain funds by sale of their short term promissory notes or commercial paper. This method of borrowing is common only in the United States and is used exclusively by nationally known corporations of high credit standing. Investment trusts moreover appear as borrowers in the market at times when they find it desirable to buy securities with the aid of bank credit. Often, however, investment trusts also lend money to brokers on collateral.

Because of the intimate connection between the separate markets within the general money market the rates prevailing in the various markets are closely related. In London this is the result of the close relationship between all open market rates and the Bank of England discount rate. As a rule the Bank of England rate is the highest prevailing in the market. It is followed by the rates on treasury bills and prime bankers' bills, which in turn are higher than the rate at which the bill brokers obtain loans from the joint stock banks on call or short notice. The lowest rate is that paid by the joint stock banks on deposit accounts, which is usually 2 percent below the discount rate. This 2 percent rate differential decreases only when the discount rate of the Bank of England is 2 percent or below. Thus in England under ordinary circumstances any change in the Bank of England rate immediately affects all other rates and only very seldom is there a change in the rate structure described above. The same applies to the continental countries, where the discount rate as a rule is higher than other open market rates.

In the New York money market two distinct rate structures are in existence: rates which stand in a definite relationship to the discount rate of the Federal Reserve Bank and those which are not so related. In the first class are the rates on acceptances, commercial paper, short term government securities and federal funds. These rates invariably move in close relationship with the discount rate and are usually somewhat lower, since the transactions to which they apply may be shifted to the Federal Reserve Banks. Entirely distinct from these rates is the rate on collateral loans (brokers' loans) which cannot be shifted to the reserve banks. This rate has therefore no definite relationship to the discount rate. There is, however, a definite relationship between the different rates in the New York money market. If the call rate is higher than the other open market rates, lenders will naturally place their funds in this market, with the result that the demand for acceptances, treasury bills and commercial paper is reduced and rates in these markets rise. Similarly a decrease in the call rate results in a shift of funds to other markets, thereby causing a lowering of other rates.

Every money market is to a greater or lesser extent subject to the control and domination of the central bank of the country. This control may be exercised through the discount rate of

the central bank, which has a direct and often an immediate effect on the other rates. A second instrument of central bank policy which has been widely used in post-war years is open market operations in government securities or acceptances by the central bank. Through the buying or selling of government securities or acceptances in the open market the central banks may either place funds at the disposal of the market or withdraw them. Open market and discount policies of central banks are usually coordinated with a view to making the discount rate effective.

The effect of open market operations in the various markets differs. In the United States the selling of government securities by the Federal Reserve Banks, unless offset by other influences, reduces the amount of member banks' reserve balances and may force them to increase their borrowings at the Federal Reserve Banks; this in turn may be, and usually is, accompanied by an increase in the discount rate. In England a reduction in bankers' balances brought about by the selling of government securities by the Bank of England forces the joint stock banks to call loans from the bill brokers, which in turn compels the latter to borrow from the Bank of England. Since the Bank of England rate is usually higher than the acceptance rate or bill rate, the forcing of the bill brokers into the Bank of England penalizes them and results in a general increase in the rate on acceptances.

The credit policies of many of the European central banks in post-war years have been influenced to a considerable extent by the movement of foreign short term funds. This was particularly true in Germany, where the discount policy from the time of the stabilization of the currency up to the collapse of the banking system in 1931 was dominated by the presence of a large volume of foreign short term funds in the Berlin money market. With the exception of the Bank of France, whose open market operations are greatly limited by law, all central banks in Europe have to a higher or lesser degree endeavored to influence the market through open market operations.

In normal times the principal money markets in each country are closely linked together in what is generally referred to as the international money market. Together they provide a system of facilities for the accumulation of the surplus liquid funds of the world and for shifting them from one market to another. Under normal conditions the major factor controlling the movement of funds from one international financial center to another is the rate of interest prevailing in the individual centers. If there is an increase in the demand for funds in one center, interest rates will rise and this in turn will attract funds from other centers. In this manner the international money market serves to equalize to a considerable extent the demand and supply of funds in the money markets of all the leading financial centers and transfers the surplus funds to centers where they are most needed.

Before the war London was the unrivaled international financial center of the world, since neither Berlin, Paris nor New York could compete with the facilities for the investment of short term funds offered in London. The virtual abandonment of the gold standard by Great Britain in August, 1914, handicapped the London money market in the years immediately after the war, and New York became a keen competitor of London for the short term balances of the world and for certain periods even exceeded London in importance. After the stabilization of the pound sterling in 1925, however, London gradually regained its position and up to the abandonment of specie payments in September, 1931, competed with New York for the international financial leadership of the world. The leadership of New York was interrupted early in 1933, when the banking panic and the closing of the New York banks greatly injured the prestige of the dollar. Since 1928 Paris has again assumed the role of an important financial center, but lack of facilities for employment of short term funds makes it difficult if not impossible for that city to rival London or New York.

The rise of New York as an international financial center has caused certain significant changes in the operation of the international money market. As the London money market operated before the war, a large inflow of foreign funds placed more funds at the disposal of the bill brokers, but since the volume of bills did not increase automatically to the same extent, the result was a decline in bill rates which in turn tended to check a further inflow of funds. In New York, on the other hand, in the post-war period a large part of the foreign funds coming into the market was used for the financing of stock exchange transactions, thereby further aiding speculation in securities and creating a greater demand for funds. Since the demand for funds for stock exchange speculation has practically no limit during a boom period, the inflow

of foreign funds from abroad did not bring about a decline in interest rates and thereby prevented the automatic adjustment which usually took place in England.

With the abandonment of the gold standard in England in September, 1931, the international movement of short term funds in response to changes in interest rates in different centers came to a halt. The only transactions taking place represented either liquidation of commitments contracted prior to the abandonment of specie payments by Great Britain, the shifting of funds for speculative purposes or a flight of capital from one country or another for the sake of safety. At the beginning of 1933 the international money market had practically ceased to exist and the banking difficulties in the United States in March, 1933, destroyed the last vestige. Various suggestions have been made for the revival and reorganization of the international money market, some of them involving the use of the Bank for International Settlements to facilitate international movement of funds. A restoration of the international money market can, however, take place only when the currencies of the leading countries are again on a common standard and when economic and political conditions once more permit the free shifting of funds from center to center.

Each individual money market plays an important role in the national economy of the country which it serves and facilitates the financing of transactions, domestic and foreign, which cannot conveniently be financed by the banks individually. It offers the banks of the country the means of temporarily employing their surplus funds in liquid investments and constitutes a source from which they draw funds when special demands are made on them by their customers. The rates of interest prevailing in the open market, however, have only slight effect on the rates banks charge their customers on loans. The rate to customers depends on the geographical location of the bank, on the type of credit extended and on the credit standing of the customer. The money market deals only in standardized loans and credit instruments, and only those business enterprises which can comply with the standard requirements for such credit operations have access to the money market.

By the accumulation of surplus funds the money market facilitates the flotation of long term loans for governments as well as corporations. Conditions in the money market therefore affect the rate of interest on long term capital and directly condition the movement of funds into long term capital investments. At times the influence of the money market on the capital market is such as to enable larger business enterprises to finance themselves directly instead of through the commercial banks. The money market is of importance to the government particularly in periods of budgetary deficits, since it makes it possible for the treasury to obtain funds not only for temporary needs but also for capital investments and improvements.

MARCUS NADLER

See: FINANCIAL ORGANIZATION; INTERNATIONAL FINANCE; INVESTMENT; INVESTMENT BANKING; BANKING, COMMERCIAL; CENTRAL BANKING; FEDERAL RESERVE SYSTEM; CREDIT CONTROL; SPECULATION; STOCK EXCHANGE; CALL MONEY; BROKERS' LOANS; ACCEPTANCE; FOREIGN EXCHANGE; ARBITRAGE.

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MONEY RAISING DRIVES. *See* DRIVES, MONEY RAISING.

MONOD, GABRIEL JACQUES JEAN (1844–1912), French historian. Monod was professor of history at the École Pratique des Hautes Études, at the École Normale Supérieure and later at the Collège de France. In 1875 in conjunction with G. Fagniez he founded the *Revue historique* and served as its editor until his death. Both as teacher and as editor Monod exerted a decisive influence on French historiography. At the École des Hautes Études, where he taught from 1868 to 1905, he conducted exhaustive researches into the Merovingian and Carolingian periods, training a group of students who became the outstanding contributors in this field. From his researches Monod himself produced

suggestive studies on Gregory of Tours (*Grégoire de Tours*, Paris 1872) and on the literary and historical renaissance of the Carolingian epoch (*Études critiques sur les sources de l'histoire carolingienne*, Paris 1898), besides a manual of Merovingian and Carolingian institutions which he never prepared for publication. In innumerable articles in the *Revue historique* he continued during almost forty years to follow closely the historical movement and to give his advice, which always carried great weight, on questions of method and organization of historical work. His *Bibliographie de l'histoire de France* (Paris 1889), which appeared at a time when there did not yet exist in France a bibliographical index to French history, has greatly facilitated the task of succeeding scholars. Monod devoted important studies to several historians of the nineteenth century (*Les maîtres de l'histoire*, Paris 1894, 3rd ed. 1896), including Taine, Renan and especially Michelet, whose papers he possessed and on whom he wrote a number of works. Of these *La vie et la pensée de Jules Michelet, 1798–1852* (2 vols., ed. by C. Bémont, Paris 1923) is the most important.

LOUIS HALPHEN

Consult: Bémont, C., and Pfister, C., in *Revue historique*, vol. cx (1912) i–xxiv; Bémont, C., in École Pratique des Hautes Études, Section des Sciences Historiques et Philologiques, *Annuaire* (1912–13) 5–41, with inclusive bibliography.

MONOGAMY. *See* MARRIAGE.

MONOMETALLISM. *See* BIMETALLISM AND MONOMETALLISM.

MONOPOLIES, PUBLIC. Public monopolies present a form of economic enterprise in which the elimination of competition—the essential characteristic of monopoly—is sanctioned by public authority. They generally fall into two major groups: public natural monopolies and public monopolies proper, the latter frequently being referred to as legal monopolies. The first group comprises the numerous monopolies in the field of public utilities, such as transportation, communication, water supply and the like, which derive their position as monopolies primarily from the natural conditions of production; the legal act of monopoly merely involves a transfer to the state of an industry which already is a monopoly or inherently tends toward it. The main purpose underlying such action is the desire on the part of the state to prevent the possible exploitation of the consumers by private entrepreneurs in monopolistic control of commodities or services indispensable to the welfare of the community (for monopolies of this type *see* PUBLIC UTILITIES; GOVERNMENT OWNERSHIP). The distinguishing feature of the second type of public monopoly is that its status is a deliberate creation of legislative fiat and can be maintained only by the power of the state itself. Such a legal monopoly may be created either for regulatory or for fiscal purposes. The former category includes government monopolies in the manufacture of explosives, dictated by considerations of national security; monopolies in the issue of currency, designed to assure a certain degree of monetary stability; and monopolies which partake of the nature of sumptuary legislation, intended to restrict the consumption of certain commodities in the interests of public health, such as the opium monopoly in India. Of wider significance, however, is the type of monopoly whose sole purpose is to increase the revenues of the state, such as tobacco monopolies in France, Austria and other countries. This fiscal, or financial, monopoly, with which this discussion will be mainly concerned, is essentially a tax device; the difference between the charge of the monopoly and what the price would have been if the commodity or service were supplied under competitive conditions constitutes the indirect payment of a consumption tax. Finally, it should be remembered that many public monopolies do not fit into a clear cut classification and present a combination of regulatory and fiscal purposes, of which one or the other may dominate the policies of the monopoly administration.

While the public natural monopoly is largely an outgrowth of modern conditions of large scale production and concentration of economic power, public monopolies proper stem directly from the patents and monopolies granted in earlier periods under the royal prerogative. The practise of granting monopoly privileges to corporations and individuals in exchange for the payment of stipulated sums first assumed wide proportions in France and England, where the existence of a wide internal market and area of control necessary for an effective monopoly existed at an earlier period than in other countries. The granting of monopoly rights was often prompted by the desire of the king or prince to encourage the development of a new industry, to promote discoveries and exploration of new markets, to attract foreign craftsmen and, finally, to reward loyal citizens and royal favorites. The general

dissatisfaction caused by the abusive price practises of the monopolistic entrepreneurs led in England to the abolition of the royal prerogative in 1689 and to the disappearance of this form of monopoly. In other European countries, like France, Austria and Italy, some of the earlier monopolies granted to private entrepreneurs were in time taken over by the governments and incorporated into the general fiscal structure of the respective countries.

In addition to these "old" monopolies many governments have in modern times resorted to the creation of new monopolies by converting into public monopolies industries which developed under conditions of private competitive enterprise. This practise has been particularly widespread since the World War, when most countries, especially on the continent, have been compelled to look for new sources of public revenue to cover mounting budgetary deficits. The distribution of the more important fiscal monopolies in European countries before and after the World War is given in the accompanying table. The motives underlying the creation of the "new" monopolies have been either fiscal or regulatory, frequently a combination of both. Examples of fiscal monopolies with a regulatory purpose are the spirits monopoly in Soviet Russia and the post-war quinine monopoly in Italy. In both instances the coexistence of the two motives leads to difficult problems of policy. In the former the purpose of regulation, which would tend to discourage consumption, may come into conflict with the desire to encourage sale and thereby to augment public revenue. The spirits monopolies in Germany, Switzerland and France, although fiscal in form, are used primarily as a means of assuring to the producers of alcohol yielding grain and fruits a profitable and non-competitive price, thereby serving to perpetuate the existing system of agricultural proprietorship in the respective countries. An admixture of social policy and fiscal consideration is exemplified also to some extent by the liquor monopolies in the provinces of Canada, which although intended originally to be instruments of sumptuary control began in time to assume some importance as a source of public revenue. Similarly the fiscal motive has become of growing importance in the increasingly strong movement for the repeal of prohibition in the United States.

On the other hand, fiscal considerations were paramount from the outset in the creation of a tobacco monopoly in Japan in 1898 and in Sweden in 1914. In both instances the occasion for the creation of the monopoly was the sudden additional need for funds caused in Sweden by

GEOGRAPHICAL DISTRIBUTION OF SELECTED FISCAL MONOPOLIES IN EUROPE BEFORE AND AFTER THE WORLD WAR*

TOBACCO	CIGARETTE PAPER	ALCOHOL	MATCHES	SALT
		BEFORE THE WAR		
France	Serbia	Switzerland	France	Italy
Italy	Rumania	Serbia	Italy	Austria-Hungary
Austria-Hungary	Bulgaria	Russia	Spain	Serbia
Spain	Greece		Turkey	Rumania
Portugal			Serbia	Greece
Serbia			Rumania	Turkey
Rumania			Bulgaria	
Turkey			Greece	
			Portugal	
		NEW MONOPOLIES AFTER THE WAR		
Sweden		Germany	Germany	Poland
Danzig		Soviet Russia	Danzig	Jugoslavia
Poland		Norway	Poland	Czechoslovakia
Czechoslovakia		Latvia	Estonia	
Greece		Estonia	Lithuania	
Vatican		Poland	Jugoslavia	
Estonia		Turkey		
Jugoslavia		France		
		Finland		
		Jugoslavia		
		Lithuania		
		Rumania		

* Not included in this table are the relatively rare instances of fiscal monopolies in quinine, petroleum, lotteries, benzine, sugar, flax, revolvers, confectioneries and printed posters, scattered in various European countries.

the introduction of old age insurance and in Japan by expenditures incurred in the war with China. In neither country, however, was the system of tobacco taxation well developed, and it would probably have been possible to obtain an increase in revenue equal to that attainable by monopoly through an increased tax on tobacco. In Sweden monopolization seemed preferable to an increase in the tobacco tax, as it was feared that the imposition of the latter upon an industry which was organized predominantly in small plants would have the effect of intensifying competition and would lead to wholesale bankruptcies and eventually to concentration of control in the hands of a few to the detriment of the small producer. The act of monopoly, on the other hand, provided for the indemnification of all producers.

A variant of the fiscal motive is evidenced in the monopolies which were created for the purpose of serving as pledges in securing public loans. This practise became particularly widespread in the years following the World War, when many European countries confronted by fiscal deficits found it difficult to secure loans without pledging specific sources of revenue as security for the loans. Instances of such monopolies are the match monopolies in Danzig, Poland, Germany and in the Baltic States pledged to Ivar Krueger as security for the loans advanced by him to the respective governments. In other instances monopolies already in existence were used for the same purpose. It should be pointed out, however, that there is nothing in a public monopoly as such which makes it particularly suitable to serve as security for public loans; ordinary excise taxes or customs duties serve the purpose equally as well.

Since the primary purpose of the fiscal monopoly is the securing of public revenue, the fiscal motive determines the choice of the commodity. The commodities most frequently singled out for monopolization are tobacco, alcohol, matches, salt—these, although widely consumed, are not, with the exception of salt, absolute necessities; their consumption rather reflects a certain degree of paying capacity on the part of the consuming public. The imposition of the fiscal charge in the form of the monopoly price would not therefore result in an abrupt decline in consumption, a circumstance which would defeat the very purpose of monopolization. In order to protect the monopoly against evasion on the part of consumers resorting to self-made or imported goods, compensatory duties or taxes are usually imposed on commodities which are subject to monopoly.

In addition the fiscal motive is the deciding factor in the determination of the scope of monopoly control. There has usually been differentiation, in the literature of the subject, between full and partial monopoly. A full monopoly exists if all the stages in the production and distribution of a particular branch of industry are under government control. This is the case in the tobacco monopolies in France and Austria, which purchase the tobacco through their own departments, prepare it and have it sold through specially licensed retail distribution centers. In a partial monopoly control is confined only to one stage in the process of production; all other stages in production and distribution are left to private enterprise. This is true of the spirits monopoly in Germany whereby the government controls the process of distillation of the privately manufactured spirits, which are returned for distribution to private enterprise after the imposition of the fiscal surcharge. The liquor monopolies in the Canadian provinces leave the entire process of production to private enterprise, confining themselves to retail distribution of the product.

The organizational forms of fiscal monopolies have undergone considerable change in recent years. Until shortly before the World War the dominant form was that of a purely administrative department of the general fiscal apparatus of the state; all details of operation were a part of the administrative routine, subject to the immediate supervision of the fiscal authorities. Especially typical of this form was the French tobacco monopoly until 1926; it was administered by two governing boards, the Direction Générale des Manufactures de l'État and the Direction Générale des Contributions Indirectes. The former supervised the purchase of raw tobacco and manufacture, while the latter, also an agency for the collection of the excise tax, supervised the sale of the manufactured product to the retailers. Both were divisions of the general financial administration and under the direction of the minister of finance. The director of manufactures was limited in all his actions. No single purchase for the factories could exceed 12,000 francs without the authorization of the minister of finance. The regulation of salaries, promotions and personnel, which were determined by length of service rather than by ability, lay with the general financial administration. For technical alterations the authorization of the minister of finance

was required. Expenditures were limited by the budget, not only in total extent but also in individual items; no possibility of transfer of credit existed. There was no commercial system of accounting, and there were no reserves which would permit the monopoly to take advantage of favorable buying opportunities. If such reserves were requested, the need was investigated by the Commission Sénatoriale des Finances, just as were the financial requirements of other branches of the administration. The result was an administration which was extremely inflexible, incapable of adjustment to opportunities in the market, bound by elaborate regulations and administrative routine and severely restricted in its business activity. Consequently most fiscal monopolies in recent years have introduced more independent forms of organization, endowed with greater freedom in their commercial transactions, as exemplified by the wider scope of functions assigned to the commercial director in the Austrian tobacco monopoly and to the administrative body of the French tobacco monopoly since 1926. Considerations of economy and efficiency also determine whether in the countries where several fiscal monopolies exist separate organizations shall be established for each monopoly, as, for instance, in Germany, or whether the existing monopolies shall be merged into one central organization, as in the case of the seven monopolies in Jugoslavia.

In the case of the new monopolies, that is, those which have been called into being through the conversion into a fiscal monopoly of a branch of industry hitherto privately controlled, the participation of private capital has as a rule been necessary. But it has been also on grounds of managerial efficiency that this type has assumed the form of a commercial enterprise. The participation of the state is assured by the appointment of a representative of the government to the board of directors or by the provision that price changes must be promulgated by legislation or by ordinances with force of law. The Danzig tobacco monopoly serves as an example of the form of organization of the new monopolies. This monopoly is managed by a director and supervised by a board elected by the stockholders. A state commissioner acts as the representative of the government. The division of profits is so regulated that after payment of the fiscal levy the share of the stockholders decreases with increasing profits but always remains sufficiently great to furnish an incentive for increasing productivity. The advantage of this system lies in the skilful application of a profit sharing device which retains the profit making incentive for the managers of the monopoly while at the same time giving to the state the lion's share of the profits.

The general increase in taxation which marked the fiscal development of post-war years, particularly in Europe, and the resulting search for new sources of revenue have brought to the fore the problem of whether increased revenues, no longer realizable through the usual process of raising the existing taxes, can be secured by the transformation into a monopoly of a hitherto private but taxed industry. The problem has been of particular interest in Germany, where the taxable resources have been strained to the utmost in the years of post-war financial stringency. The discussion has centered around the relative merits of a tobacco monopoly over a private tobacco industry, subject to excise. The fiscal monopoly undoubtedly offers certain advantages over the ordinary consumption tax. The yield is likely to be higher in that it includes also the profit share which would otherwise accrue to the private entrepreneur. It provides the government with a more flexible tool in adjusting revenue than that offered by the cumbersome method of changing tax rates. By controlling prices and thus regulating the amount of the tax to be included in the charge the monopoly can effect a finer differentiation of the tax with regard to qualitative differences of a commodity than that provided by the practise of setting up a series of differential excise rates for specified grades of a privately produced commodity. Finally, by its centralized control the monopoly permits a greater degree of rationalization of the processes of production and distribution than if these were left in the hands of numerous private producers and distributors. The last advantage appears striking, if one compares, for example, the relatively higher proportion of profits of the Austrian tobacco monopoly with the share yielded by the German tobacco tax. Investigations have brought out the fact that the production costs of the Austrian and other tobacco monopolies are considerably below those of the German tobacco industry. It has thus been generally concluded that the conversion of the German tobacco industry into a monopoly must immediately be attended by increased fiscal revenues. This conclusion, however, does not take into account the great expenses involved in compensating the private owners, the social effects of the uprooting of thousands of independent produc-

ers and the necessarily slow performance of a new monopoly. Furthermore the experience of the Swedish tobacco monopoly which was built upon a hitherto free tobacco industry has revealed that the resulting decrease in cost was almost entirely in the field of distribution rather than in that of production. It is therefore highly questionable whether a comprehensive monopolization act, including all stages of production and distribution, would bear a reasonable relationship to the cost of conversion. Nor is the introduction of a partial monopoly free from serious difficulties. It is scarcely possible in the long run to submit to monopoly control one stage in the process of production or distribution of a commodity with any degree of fiscal success without at the same time disturbing the preceding or succeeding uncontrolled stages. Thus a monopoly of the wholesale trade in tobacco products, such as has been suggested for Germany, would expose the producers to the price dictatorship of the monopoly administration, which in its desire to increase revenue might be tempted arbitrarily to reduce the purchase price of tobacco and thus to force the small producer out of business. Moreover the advocates of monopoly frequently ignore the fact that the government could in many instances increase considerably the taxable capacity of an industry subject to excise by a compulsory lowering of the profit margin allowed to the retailer, thereby securing some of the benefits of monopoly without the difficulties involved in the act of monopolization.

The fiscal importance of the monopoly in the budgets of the various countries cannot be reduced to a common denominator. An international comparison reveals a close correlation between the share contributed by general consumption taxes and that yielded by fiscal monopolies. The fiscal monopoly is consequently of greater significance in countries of limited capitalistic development, especially in southern and southeastern Europe, where property and income taxes are not sufficiently productive to justify the maintenance of an elaborate collection machinery and the state has to resort to various indirect consumption taxes including the fiscal monopoly. Thus in Poland the yield derived from fiscal monopolies in recent years was in amount equal to approximately 59 percent of the amount raised from general tax sources, in Turkey 51 percent, in Jugoslavia 40 percent, in Austria 39 percent, in Lithuania 38 percent, in Czechoslovakia 35 percent, in Rumania 33 percent, in Latvia 29 percent, in Estonia 26 percent. Among western countries France secured from fiscal monopolies an amount equal to 32 percent of the total raised by taxation, Spain 25 percent, Sweden 17 percent, Norway 12 percent, Germany approximately 7 percent.

It is extremely difficult to determine the comparative economic efficiency of monopolies in various countries. The actual revenue can scarcely be taken as a criterion of efficiency, since it depends largely upon the general taxable capacity of the country rather than upon the performance of the respective monopolies. An inefficiently run monopoly in a wealthy country will at all events bring in larger revenue both per capita and per unit of product than an efficiently run monopoly in a poor country. An international comparison would therefore require a thorough examination of cost of production and its constituent elements with all the difficulties attending international comparison of cost phenomena. The limits of an international comparison of fiscal monopolies are consequently more narrowly defined than are the limits of an international comparison of taxation.

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See: MONOPOLY; REVENUES, PUBLIC; EXCISE; TAXATION; PUBLIC UTILITIES; GOVERNMENT OWNERSHIP; GOVERNMENT OWNED CORPORATIONS; SUMPTUARY LEGISLATION; LOTTERIES; LIQUOR TRAFFIC; MATCH INDUSTRY; TOBACCO; PAWNBROKING; PUBLIC DEBT; CHARTERED COMPANIES; MERCANTILISM.

Consult: Madsen, A. W., *The State as Manufacturer and Trader* (London 1916); Gross, H., "Die Organisationsformen des Finanzmonopols in Europa" in Verein für Sozialpolitik, *Schriften*, no. 176, pt. iii (Munich 1931) p. 1–55, and *Tabakmonopol und freie Tabakwirtschaft*, Universität Kiel, Institut für Weltwirtschaft und Seeverkehr, Schriften, no. 51 (Jena 1930); Bräuer, K., *Reichs-Tabakmonopol oder Tabak-Verbrauchssteuer?*, Finanzwissenschaftliche und volkswirtschaftliche Studien, no. 21 (Jena 1931); Majorana, S., articles in *Rivista di politica economica*, vol. xx (1930) 659–76, 737–56, 944–59, vol. xxi (1931) 26–39, 303–18, 564–82, 965–74, 1097–1108, and vol. xxii (1932) 24–43, 153–65, 310–19; Rǿgind, Sven, *Spiritus-monopolet* (Copenhagen 1925); Schwarzenberger, Georg, *Die Kreuger-Anleihen* (Munich 1931); Cohn, Gustav, *System der Finanzwissenschaft*, System der Nationalökonomie, vol. ii (Stuttgart 1889), tr. by T. B. Veblen as *The Science of Finance* (Chicago 1895) p. 431–58; Kambe, Masao, "State Monopoly as a Method of Taxing Consumption" in *Kyoto University Economic Review*, vol. vii, no. i (1932) 1–13.

MONOPOLY. The principle of monopoly may be defined as unified or concerted discretionary control of the price at which purchasers in general can obtain a commodity or service and of

the supply which they can secure, or the control of price through supply, as distinct from the lack of such control which marks the ideal situation of perfect competition. The principle applies *mutatis mutandis* to buyers' monopoly and should properly also be applied to similar control of quality or of any other matters which are subjects for bargaining. The term is sometimes loosely used to cover any strict limitation of supply not resulting from concerted or unified discretionary action by persons or groups—for instance, the limitation of supply of particular grades of land or of labor—but this usage is probably inexpedient, as it leaves no point at which the principle of monopolistic control may be distinguished from the universal principle of scarcity. As distinct from monopoly the principle of competition represents a condition in which no individual, group or bargaining unit has any discretionary control over general supply or price, these being completely governed by the separate actions of the competitors, who follow their own interests in entire independence. Pure monopoly is not frequent, and close approximations to pure competition in the strict theoretical sense are extremely rare; most actual situations represent something intermediate, with varying degrees of discretionary control, and subject to varying degrees of competitive checks. The conceptions of pure monopoly and of pure competition are then for the most part abstractions, useful for certain purposes of analysis but seldom realistically describing concrete situations.

Monopoly is generally regarded as being limited in its control by the power of the purchaser to substitute some other commodity or service for the one controlled by the monopolist. In the case of a buyer's monopoly this would mean the power of the seller to find some different kind of outlet for the thing he has to sell or some other use for the resources involved in its production. In actual practise the distinction between the threat of substitution and the threat of competition from rival producers of what may be regarded as "the same" commodity is a hazy one. Since manufacturers of quality goods typically seek to establish a difference or an impression of a difference between their products and those of their competitors, it is perhaps permissible to say that to the extent to which they succeed they possess a monopoly of those elements in which their product or its reputation is unique but not of the basic elements of service common to their product and to that of their rivals. Such a monopoly, however, unless fortified by patents, secret processes or other obstacles to imitation holds a peculiarly limited degree of power, since rivals are free to make an identical product and to build up an equivalent reputation for it.

Another angle of the distinction between monopoly and competition may be approached via the character of the demand schedule for the product offered by a single producing unit or controlling group. Theoretically perfect competition requires a condition in which a competitor cannot sell goods at a higher price than his rivals are charging and can take their customers away from them by cutting his price very slightly below theirs. In the language of demand schedules the demand for one competitor's product taken by itself is infinitely elastic through an indefinitely small price range on both sides of the price which other competitors are charging. This is the reason for the tendency of competition to lower prices until returns are no more than the necessary supply prices of the factors of production; and any circumstance which gives the individual producer a less elastic demand schedule than this puts him in a position to maintain prices somewhat above the theoretical competitive minimum.

With a complete monopoly, on the other hand, the demand schedule for the product of the monopolistic organization is coextensive with the consumers' whole demand for that product. Whether it is relatively elastic or inelastic, it will seldom or never have that infinite elasticity at one critical point which is the mark of "perfect" competition. It may show high elasticity through a price range at which the monopolized product is about as attractive as some important substitute; but just because the substitute is a different kind of thing, consumers' preferences are likely to interpose some inertia, so that there will be no definite price above which all consumers will shift to the substitute and below which none will do so. This is true even over long periods of time and still more for short periods. With a finite elasticity of demand the law of monopoly price comes into play. Raising of the price above the strict competitive level yields a net profit, although on a decreasing volume of business; and somewhere above the strictly competitive level this net profit will reach a maximum.

If producers of branded and quality goods, with their quasi-monopoly position, do not always realize a net profit in this sense, the

reason is to be sought, first, in the long run sensitiveness of their sales to the relative prices charged by them and their competitors, which may be much greater than the short run sensitiveness; second, in the effects of overhead or constant expenses, which introduce a condition whereby monopoly profit may be a minus quantity if there is surplus productive capacity; third, in the effect of the unpredictable fluctuations in business activity which result among other things in an intermittent state of surplus capacity; and, finally, in the costs of building up the goodwill of a brand, a cost which is essentially competitive.

Neither the theory of monopoly nor that of competition was fully developed before the nineteenth century. Elements of monopoly control were, however, common in the social organization of the Middle Ages as they had been in that of the later Roman Empire. The craft guilds controlled admission to the crafts, set standards of workmanship and adhered to the doctrine of the just price. The restrictions on entrance to membership undoubtedly became monopolistic in limiting the number who could become masters. Of a different character was the mediaeval regulation of markets, which set out to secure "direct selling" and to prevent speculation and corners. A guild rule whereby a member who secured an unusually good bargain in his materials was bound to share it with his fellow members served to prevent one kind of competition, which was, however, of rather doubtful value to the consumer. Such regulations aimed to maintain stability, and the monopoly they permitted was essentially a monopoly of status.

The impact of changing techniques and expanding trade shattered this system but did not automatically introduce free competition. The early national governments granted monopolies in distant trade to large organizations, such as the East India Company, while domestic monopolies were sold for revenue purposes or were granted to favorites. The doctrine of the just price was never applied to distant trade; Martin Luther thundered against the monopolistic practises of great trading organizations in terms suggestive of the early days of the American crusade against the trusts.

While the control of prices was first being shifted to the royal governments and then falling into desuetude, there were certain activities in which the obligation to serve all comers at a fair price persisted. These were thought of as public callings in a special sense distinct from the general conception of "holding oneself out" to serve the public, formerly applied to anyone who offered his services to all and sundry in the regular way of business. Common carriers are the type of such public callings; and the persistence of their subjection to control is presumably to be explained as due to the recognition either of an element of natural monopoly or of a situation in which the consumer is handicapped in getting the benefit of whatever competition there may be, like the traveler who patronizes a hotel or inn.

During the first half of the nineteenth century the competitive system was probably more generally in effect than ever before or since. The East India Company was deprived of its monopolistic trading privileges in India in 1813 and in the China trade in 1833. The survivals of guild privileges lapsed before the changing techniques brought by the industrial revolution, while labor organizations were treated as conspiracies. Those "natural monopolies" which are classed as public utilities had nothing like the importance they have since acquired; and the more characteristic modern forms of monopoly in other fields had gained no great development. Thus the term competitive system was a fairly accurate description of the actual state of affairs.

With the coming of the railroad there was added to the system a huge industry which was at least in a partial sense naturally monopolistic. The resultant broadening of markets led to the development of industries serving an entire continent and more, based on large scale units operating with great masses of fixed and specialized capital. The outcome was the trust movement in America and the development of cartels and other forms of combination in other countries.

These monopolistic developments were definitely related to the new forms of industrial technique. Concentrated production reduced the number of competitors and brought unification within reach. The massed control of patents furnished another basis of power, whereby in place of mere temporary monopolies of single processes of production there could arise more durable monopoly power over the product which these patented processes serve to make. The newly developed fuel—oil—with the large scale refining operations it required afforded the field for one of the most conspicuous of the early trusts, the Standard Oil Company. Railroad

discriminations and other forms of competitive sharp practise acquired a wholly new significance when systematically used by a great concern for the wiping out of competitors and the establishment of a monopolistic position. In other cases there was fear or threat of a form of competition which would drive prices below cost for all producers, a danger in great measure due to the existence of very large fixed capitals and the corresponding volume of constant costs. Cournot had already noted that in such a case, if any net returns are earned, it must be by virtue of some monopolistic element in the situation, since with unqualified competition returns would be a minus quantity.

The desire to escape the threat of such price warfare was prominent in the situation which led to the formation of the United States Steel Corporation; but as the antitrust laws made complete consolidation out of the question, there developed here and in other industries more informal arrangements between large and small producers which influenced price policies. Such were the "Gary dinners," where the steel price situation was talked over. More important is the practise of "price leadership" by dominant concerns, through which without overt concerted action a fairly effective safeguard is erected against what Marshall has called "spoiling the market." Trade associations may contribute to similar results.

This hybrid situation represents the response of American business to the antitrust laws; in Europe the drive toward monopoly was expressed in the formation of cartels (*q.v.*) and combines, often with government encouragement or assistance. Since the World War there have been increasingly frequent attempts at the formation of monopolies in the international sphere. International cartels have met with but limited success. Recurring crises of overproduction of basic raw materials have brought into prominence the idea of valorization (*q.v.*), or definite arrangements for the control of the supply and the price of internationally important staples on a national or international scale, frequently with participation or approval of the governments of the producing countries. Twenty or more important raw materials have been so controlled in the years since the war.

A survey of modern tendencies toward monopoly should include mention of farmers' cooperative marketing organizations, which obviously limit the field of competition in selling agricultural products but which, however, in their ordinary form have no effective control of the supply of the products they sell. Agriculture seems to be in a different class from manufacturing in that it is extremely difficult to make effective any control of supply, whether monopolistic or merely prudential and aimed at the prevention of cut-throat competition.

In the field of labor various stages in the series from pure competition to outright monopoly include collective bargaining, the closed shop and the control of numbers through apprenticeship. The last is clearly monopolistic if it goes beyond what is necessary to protect the workers against attempts of the employer to use apprenticeship as a mere device for hiring labor at substandard rates. Collective bargaining at rates yielding normally full employment to the members of an inclusive union does no more than insure the ideal of the competitive market: one price in one market and no secret differentials or discriminations. But full employment is an indefinite quantity, and it may seem advantageous to maintain wage rates even at times when the demand for labor at those rates is clearly short of the supply. The union will usually maintain—presumably in entire good faith—that the resultant unemployment is due to other causes and is not made worse by the maintenance of the wage rate; and such a contention can seldom if ever be proved false. The closed shop may be a means to making collective bargaining effective or it may be an instrument of monopoly policy. One of the important results of monopolistic policies in the field of labor is the sharpening of the contrast between the skilled and well organized workers and the unskilled and unorganized.

The classical economists built their conception of the "natural" course of economic affairs on the assumption of free competition but without much analysis of its nature or the machinery of its operation. To them monopoly meant primarily the legal monopolies granted by the national governments in distant trade, although Adam Smith extended the idea to mercantilist restrictions confining trade to members of one country and in a larger and secondary sense to apprenticeship restrictions and survivals of guild privileges. His attitude was somewhat paradoxical and unsatisfactory in that he noted: "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices. It is impossible indeed to prevent such meetings, by any

law which could either be executed, or would be consistent with liberty and justice." Yet he continued to treat the competitive system as the natural order. The evils of monopoly as the classical economists saw it lay not merely in high prices but apparently quite as much in inefficiency and in the warping of the natural apportionment of labor and capital between different occupations. Some of the classical economists spoke of land as a natural monopoly; and John Stuart Mill noted that a trade may gravitate into so few hands—especially where large capital is required—that profits may be kept up by combination.

The pioneer in the quantitative formulation of the law of monopoly price was Augustin Cournot (*Recherches sur les principes mathématiques de la théorie des richesses*, 1838). He formulated algebraically the conditions of the maximum profit price under absolute limitation of supply, in case of production without cost or at constant cost irrespective of output and in case of costs varying in different fashions in response to changes of output, as well as the effects of changes in costs or of taxes of various sorts.

The theory of the monopolistic principle has hardly developed apace with the movements in actual practise. The original theory of pure monopoly price, namely, the price yielding maximum profit, limited only by the consumer's demand schedule for the commodity and by the behavior of costs of production, remains much as Cournot left it; but the cases to which it may be applied are rare. Monopolies of this sort are probably limited in the main to temporary patent monopolies on new commodities, as distinct from the far greater number of patents on processes of production, and to a few international commodities, such as diamonds and mercury, where the bulk of production and the bulk of consumption are in different countries and where for this reason the governments of the producing countries are less likely to feel that the protection of the consumer against exploitation is paramount over the profits of the producer. To the extent that these monopolies are temporary the element of time becomes a significant and undeveloped part of the theory of monopoly price.

Another possible area of further theoretical development lies in the behavior of substitution. This can be expressed by changes in the slope of the demand curve, which flattens out and becomes much more elastic at critical points where a change in the price of the monopolized commodity will cause a substitute to be preferred or vice versa. The price yielding maximum profit will frequently lie just below such a critical point. Under substitution may well be included such imitations of patented goods as can be made without technical infringement. The patented product often has little more than a nominal monopoly.

Aside from the large and growing field in which the monopoly price is fixed by public authorities, the effective limitation on prices charged by producers who have some measure of monopoly power generally falls at a point somewhat below that set by the consumer's demand schedule. Prices are kept below this point by public pressure or the desire to forestall public action or by the fact that a grasping policy will bring into effective existence competition which is now dormant.

One might expect to find more completely developed the theory of hybrid conditions, of those intermediate situations in which competition exists but competitors are too few and too large for the condition of theoretical pure competition. Yet this situation—variously called duopoly and monopolistic competition—affords one of the most baffling problems in the field of theory, to judge by the different results attained by different authorities attacking the problem with different hypotheses. In general, interest has centered in the problem of the determinateness or indeterminateness of price under such conditions, and few attempts have been made to compare the assumptions used with actual conditions, in order to see which results are appropriate to which types of existing situations.

Cournot employed the assumption that when one producer increases his supply and lowers his price in order to market it, the other producer continues to market his previous supply unchanged, although meeting the first producer's cut in prices. On this basis he deduced a price intermediate between that of pure monopoly and that of pure competition. The result may seem plausible, but the assumption appears inapplicable to any actual situation. Amoroso followed a similar line of argument and was criticized by Edgeworth, who himself developed a theory of oscillations between the monopoly level and a lower one, at which both producers would sell their full capacity output (costs of production being neglected for the sake of simplicity). The tendency downward toward this limit Edgeworth derived from an assumption different from Cournot's; namely, that if one

producer cuts the price he will take customers away from the other. At the point where both are selling their full possible output this force clearly ceases to act; in fact before this point is reached the power of the price cutter to take business away from his rival becomes so small that the rival loses less by maintaining his price. The oscillation deduced by Edgeworth is due to the assumption of an absolute limit on productive capacity combined with the supposition that a very small cut in price will enable a producer to take from his rival as much business as he has capacity to handle, while a large difference in price can naturally do no more. Thus there is reached a point at which a concern has the option of a small cut in price (its gains in volume of business being limited by its productive capacity) or a large increase in price (its losses in volume of business being limited by its rival's productive capacity); either course might bring at least a temporary gain.

A more realistic assumption would seem to be that combined productive capacity considerably exceeds demand at cost prices. Under these conditions duopoly would drive prices down to the competitive level, so long as the price cutter gains business in the way Edgeworth presupposes. A different hypothesis is that one producer's cut in price is instantly followed by another's and that the first foresees this and so knows that he can get no business away from his rival. Thus neither would cut prices below the full monopoly level. Intermediate assumptions, as suggested by Zeuthen, involve limited power to gain business from rivals and lead to intermediate but determinate results. The effect of goodwill attached to brands might be represented in such a way. Introduction of the time element, with inevitable uncertainty as to the permanence of gains acquired through taking the initiative in price cutting, makes all determinate results seem unrealistic. The same is true of the case designated by Zeuthen as partial monopoly, where only one large concern attempts to maintain prices. Such a concern has some measure of power so long as its rivals have limited capacity or supply schedules involving higher costs of production or both—one might add, so long as these rivals have learned that the better part of valor is not to try to supply the whole market. This last would probably fairly represent the typical conditions of "price leadership" but is hardly susceptible of mathematical treatment.

A still more realistic turn might be given the discussion if the fact were noted that the actual movements of prices take place within the general currents of business cycles. According to abstract theory prices are most likely to be cut when producers are making large profits; whereas actually the heaviest cuts come when producers are already sustaining losses caused by shrinkage in demand and are made for the purpose of restoring in part an unduly shrunken volume of sales.

Another special case is bilateral monopoly, in which a monopolistic buyer purchases from a monopolistic seller or in which two requisites of production jointly demanded are separately monopolized. Here the separate interests of these monopolists can be shown to lead to a smaller supply than even a consolidated monopoly would furnish. Aside from academic interest the main case under this principle is that of a labor union bargaining with a monopolistic employer; but the union has not the same kind of power to limit the supply of labor that the manufacturer has to limit the supply of goods. Aside from very slow trends any rise in wages resulting in reduced demand for labor spells unemployment and increased difficulty in holding the members of the union as well as greater competition from non-union workers.

Goodwill attached to brands occupies a paradoxical position in the theory of monopoly, for the theorist classes it as a monopoly element despite the fact that the promotion of rival brands is the chief form of competition in many industries. The brand gives partial monopoly power if preference for it is strong enough to prevent a considerable number of customers from shifting to other brands when such brands become relatively cheaper. But producers compete in building up these preferences, and there is no reason to suppose that they do not on the average spend as much in advertising and promotion as the results are worth to them individually, let alone what the net resultant is worth to all of them together.

One doctrine often announced by theorists is that monopoly gives its possessor power to discriminate in prices, which is impossible under competition. Thus he can secure a higher monopoly profit than if he were to set one price. But the competition which prevents all discrimination is a non-existent ideal, and actual forms of competition regularly involve discriminations of numerous sorts. The doctrine of non-discrimination has been carried to an extreme by F. A. Fetter, who maintains in a recent volume that

any price system other than a uniform factory price plus actual costs of transportation is a proof that monopoly and not competition prevails. This amounts to assuming that the only real competition is that in which every producer has rivals at his precise point of shipment, and rules out by definition the typical form of manufacturers' competition—that between producers at different localities. Geographical price structures in such cases are indeterminate between bounds set by costs of transport, and one producer may set lower prices rather than higher ones to more distant points. Where such a practise becomes fixed in a stereotyped form, as in the case of the Pittsburgh-plus system of steel prices, it does afford evidence of non-competitive control.

In economic discussions of the effects of monopoly attention is somewhat unduly concentrated on prices and profits. It is true that monopolistic forces are probably able to sustain the level of profits sufficiently to increase the concentration of incomes and so to work some harm in an economy which is growingly dependent on widely diffused purchasing power to furnish the kind of market required for the disposal of the products of mass production. They may even help to sustain the interest rate at levels higher than are justified by the true social productivity of additional capital.

The more important phases of these matters are seen in their relations to class stratification of incomes, to efficiency of production and quality of products and especially to industrial stabilization and to the full use of existing productive powers. In relation to efficiency the development of applied science and organized research has reduced the importance of the competitive stimulus as a spur to the discovery and adoption of the most economical methods. On the other hand, understandings between producers, of a non-competitive character, may retard the introduction of improvements, especially in quality of products, which would cost the producers heavily in obsolescence of existing equipment. It is well known that patents are often bought by a "partial monopoly" in order to keep them out of use. Even if such patents do not embody methods superior to those in actual use by the company, the consumer might gain if they were in the hands of competitors; and such suppression is contrary to the supposed proper operation of both the competitive system and the patent system.

Cartels have long been justified as stabilizers of industry; and from this standpoint new force has of late been given to the movement for non-competitive control of output by the wave of discussion of the possibility of a "planned economy." To industrialists this naturally means "adjusting output to demand," a phrase which others think a mere euphemism for monopolistic restriction designed to maintain and stabilize profits. On the one side the claim is made that the "anarchic" system of free enterprise is responsible for cycles of prosperity and stagnation; on the other side it is maintained that the paralysis would be less severe if a system of free competition actually prevailed, and that such paralysis is aggravated by the monopolistic and quasi-monopolistic resistances to downward movements of prices and wages when the state of supply and demand makes these necessary to the flow of goods and the full employment of labor. Thus it is claimed that more effective controls of the sort business desires would be likely to make the evil worse rather than better. Perhaps the most serious effect of the present mixed situation is the resultant lack of balance between the industries which contrive some protection against the rigors of competition and those exposed to its full force, in which it becomes difficult at times (as has been the case in agriculture) to make the barest living.

In general, however, if there is a trend in opinion on this question, it is toward remedying the lack of balance by more general organization for control of supply rather than in the other direction. On the other hand, it is urged that the idea that depression can be mitigated by limitation of output is a delusion and that if any organization is to hold out hopes of remedying this evil it must not stop at organizing separately the entrepreneurs in each industry, who are interested in restricting output, but must be broader in both its objectives and its constituency, taking in those groups interested in maintaining output as well as those interested in restricting it.

JOHN MAURICE CLARK

See: COMPETITION; PRICE; DEMAND; SUPPLY; PROFIT; CHARTERED COMPANIES; MONOPOLIES, PUBLIC; COMBINATIONS, INDUSTRIAL; TRUSTS; CARTEL; TRADE ASSOCIATIONS; PRICE DISCRIMINATION; UNFAIR COMPETITION; GOODWILL; PATENTS; PUBLIC UTILITIES; RATE REGULATION; GOVERNMENT REGULATION OF INDUSTRY; PRICE REGULATION; STABILIZATION, BUSINESS.

Consult: Egner, Erich, *Der Sinn des Monopols* (Berlin 1931); Marshall, Alfred, *Principles of Economics* (8th ed. London 1920) bk. v, ch. xiv; Colson, Clément,

Cours d'économie politique, 6 vols. (new ed. Paris 1910–20) vol. i, p. 257–314; Ely, Richard T., *Monopolies and Trusts* (New York 1900); Oppenheimer, Franz, *Wert und Kapitalprofit* (2nd ed. Jena 1922) p. 75–107; Dobretsberger, Josef, *Konkurrenz und Monopol in der gegenwärtigen Wirtschaft*, Wiener staats- und rechtswissenschaftliche Studien, n.s., vol. xii (Vienna 1929); Leduc, Gaston, *La théorie des prix de monopole* (Aix-en-Provence 1927); Cournot, A. A., *Recherches sur les principes mathématiques de la théorie des richesses* (Paris 1838), tr. by N. T. Bacon (New York 1897); Pigou, A. C., "Equilibrium under Bilateral Monopoly" in *Economic Journal*, vol. xviii (1908) 205–20; Forchheimer, Karl, "Theoretisches zum unvollständigen Monopole" in *Schmollers Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft*, vol. xxxii, pt. i (1908) 1–12; Amoroso, Luigi, "La teoria matematica del monopolio trattata geometricamente" in *Giornali degli economisti*, vol. xliii (1911) 207–30; Edgeworth, F. Y., *Papers Relating to Political Economy*, 3 vols. (London 1925) vol. i, sect. ii; Zeuthen, F., *Problems of Monopoly and Economic Warfare* (London 1930), tr. from Danish by E. Zeuthen and K. I. Wiggs; Chamberlain, E. H., "Duopoly: Value Where Sellers Are Few" in *Quarterly Journal of Economics*, vol. xliv (1929–30) 63–100; Johnson, Alvin S., "The Relation of Monopoly Price to the Rate of Interest" in *Quarterly Journal of Economics*, vol. xxii (1907–08) 384–98; Chamberlin, E. H., *The Theory of Monopolistic Competition*, Harvard Economic Studies, vol. xxxviii (Cambridge, Mass. 1933); Otte, G., *Das Differential-einkommen im Lichte der neueren Forschung*, Volkswirtschaftliche Studien, no. 28 (Berlin 1930); Clark, J. B. and J. M., *The Control of Trusts* (enlarged ed. New York 1912); Fetter, Frank A., *The Masquerade of Monopoly* (New York 1931); Dobb, Maurice H., *Capitalist Enterprise and Social Progress* (London 1925); Lederer, Emil, "Monopole und Konjunktur" in *Vierteljahrshefte zur Konjunkturforschung*, supplement no. 2 (1927) 13–32; Landauer, Karl, *Planwirtschaft und Verkehrswirtschaft* (Munich 1931).

MONOTHEISM. *See* RELIGION.

MONROE DOCTRINE. Considered broadly the Monroe Doctrine is one aspect of the more general principle which assumes that Europe and America constitute two separate and distinct spheres of political activity and that they should have as little to do with each other as possible. This principle is to be found in the utterances of very early statesmen and as regards non-intervention in European affairs was given influential expression in Washington's Farewell Address and in Jefferson's first inaugural. Monroe's message of December 2, 1823, furnished the counterpart to the Farewell Address by placing a ban on European intervention in the New World.

This message had a dual origin. It was to some extent prompted by the pretensions of the Russian government to exclude all but Russian vessels from the northwest coast of America, north of 51°. There had resulted a diplomatic controversy between the United States and Russia, in the course of which John Quincy Adams as secretary of state laid down the principle that European governments could claim no right to establish new colonies anywhere in the New World, every portion of the territory thereof having already been occupied. Adams' principle was taken over by Monroe, and its exact expression was incorporated in the message of 1823 in the famous words, "the American continents, by the free and independent condition which they have assumed and maintain, are henceforth not to be considered as subjects for future colonization by any European powers." The message was a reaction also to the fear that the continental European powers were planning the reconquest of the Spanish American republics which had declared their independence of Spain. In conversations with Richard Rush, the United States minister in London, George Canning, the British foreign secretary, had expressed the apprehension that the continental powers, having just put down revolution in Spain, would transfer their attention to America. The language of the czar Alexander also led to suspicion of sinister purpose. After long deliberations in the cabinet Monroe and Adams fixed upon a pronouncement which warned against intervention and declared that "we could not view any interposition for the purpose of oppressing them, or controlling in any other manner their destiny, by any European power in any other light than as the manifestation of an unfriendly disposition toward the United States."

The message was received enthusiastically in the United States. It was not generally known that the probability of aggressive action against the Latin American states was extremely slight and that in continental Europe the vigorous pronouncement of Monroe was received with irritation and no little contempt. In the years immediately following 1823, when on four separate occasions Latin American powers sought to secure from the United States fuller commitments looking to the carrying out of the policy enunciated in the message of 1824, such commitments were refused. In the debates in Congress on the so-called Panama Congress of 1826 projected by Bolivar with a view to closer cooperation between American states, opinion in the United States was seen to be emphatically hostile to any political understanding with the new republics. They themselves, while seeking

on occasion the support of the United States, looked rather to Great Britain than to the sister republic of the north.

For some time after 1826 the principles of Monroe's message commanded little attention. There were occasions when they might have been brought forward, such as the British occupation of the Falkland Islands or British encroachments in Central America. But more significant issues than these were required. The intrigues of Great Britain and France to prevent the annexation of Texas to the United States, the quarrel with Great Britain over Oregon and fear of British purposes in California led in the 1840's to the revival of the dogmas of 1823. President Polk gave the most striking although by no means the first expression of this reviving sentiment in his message of December 2, 1845, in which he warned not only against armed intervention but also against diplomatic interference based on the principle of the balance of power and sought to give Monroe's pronouncement special but not exclusive application in the case of North America. The Polk message was well received, but like that of twenty-two years before it was not accorded congressional sanction and produced little effect abroad. In 1848 Polk reiterated his statement, suggesting that the Monroe principle forbade the assumption by England or Spain of a protectorate over Yucatan and that it would be the duty of the United States itself to assume such a protectorate rather than permit such action by a European power. Here for the first time the dogmas of 1823 became the excuse for a proposed measure of expansion. No action was taken, however.

In the 1850's the principles of 1823—first described as the Monroe Doctrine in 1852 or 1853—grew steadily in popularity and became widely known both here and abroad. From a partisan status—for under Polk and his immediate successors the Democrats claimed credit for them, while the Whigs maintained a critical attitude—they rose to the rank of a national dogma. Europeans although hostile for the most part at least knew of the existence of the doctrine. Its validity, however, was denied by Lord Clarendon when Buchanan brought it forward in the diplomatic discussions of the Central American question in 1854.

The doctrine was to receive sharp challenge in the 1860's. Spain took over the Dominican Republic in 1861, and this event was soon followed by French intervention in Mexico and the establishment of an empire in that country under the Austrian archduke Maximilian. In dealing with the first of these enterprises William H. Seward, then secretary of state, tried unsuccessfully to invoke the Monroe Doctrine. He received a sharp rebuff. In his subsequent prolonged and able correspondence with France, Seward fell into no such error. During the Civil War he pursued a policy of caution, alluding in general terms to the principles of the Monroe Doctrine, and thus keeping the record straight, but attempting no threats. When the war ended, his tone soon began to rise; and as the failure of the enterprise became obvious, from the standpoint of events in Mexico as well as in France, Seward became increasingly emphatic. By the end of 1865 it was apparent that the French would withdraw from Mexico. There can be no question that the attitude assumed by the American secretary of state caused the French government much anxiety and contributed in no small degree to the eventual decision. Throughout the negotiations Seward had been sustained by an immense body of popular opinion. The Monroe Doctrine had become truly national.

Once rooted as national dogma the doctrine was more and more liberally interpreted, often in ways which would have seemed strange to Adams or to Monroe. Before 1870 attempts had been made to link the principle of non-intervention by Europe in American affairs with the principle that territories in the New World could not be transferred from one European power to another, but this principle was most definitely asserted and most closely connected with the Monroe Doctrine in the pronouncements of President Grant. Thereafter it was repeatedly brought forward when cessions of territory seemed imminent. In the late 1870's and early 1880's the doctrine was frequently cited as forbidding the construction by Europeans of a trans-Isthmian canal and still more as implying that such a canal must be under the exclusive guaranty of the United States. Both President Hayes and President Garfield insisted upon this latter point; and in the course of time American opinion compelled the revision of the Clayton-Bulwer Treaty of 1850, which looked toward joint Anglo-American control of any canal constructed, and the signing of the Hay-Pauncefote Treaty, by which Great Britain conceded the American point of view. A still more extraordinary extension of the original doctrine was made by Grover Cleveland in his second administration when in the name of the

principles of 1823 he virtually compelled Great Britain to arbitrate a dispute with Venezuela over the boundary between British Guiana and the Latin American republic. Cleveland's stand produced a serious diplomatic crisis, and if Great Britain had not given way the situation might have become even more critical.

The opening of the twentieth century saw still further developments. American opinion was increasingly sensitive to European action in the New World; but down to 1900 punitive action by European states against unruly Latin American republics had not been followed by American diplomatic protest where no question of conquest was involved. When in 1902 Great Britain, Germany and Italy took united action in the form of a blockade to enforce the claims of their citizens against the Venezuelan dictator, the first impulse of the Roosevelt administration was to refrain from interference. Despite the legend that Roosevelt's vigorous protest compelled arbitration, the dispute was in fact put in the way of settlement without serious pressure from the United States. American public opinion, however, had been unmistakably aroused and may possibly have impelled the administration to press vigorously for the lifting of the blockade. The whole episode added weight to the growing sentiment in favor of preventive action by the United States to forestall European measures of coercion in similar instances. On this basis President Roosevelt in 1905 negotiated a treaty for American control of customs in the republic of Santo Domingo, a treaty finally accepted by the Senate two years later. In his message of 1904 he had stated frankly that chronic wrongdoing by a Latin American state might compel intervention by the United States in order to keep Europe out. The Monroe Doctrine, originally a doctrine of non-intervention, was thus transformed into a justification of intervention. Since 1915 it has frequently been cited officially or unofficially as a justification of interference on the part of the United States with the states of the Caribbean area. At the Peace Conference in Paris in 1919 President Wilson found it necessary in order to placate domestic opposition to the Covenant of the League to incorporate in that document an article declaring that nothing therein contained should affect the legal validity of regional understandings such as the Monroe Doctrine. This statement is probably not the equivalent of European recognition of the doctrine, but its incorporation in the Covenant met with considerable opposition and its eventual acceptance marks another step in the acquiescence by other powers in the principles connected with the name of Monroe. It was not by any means satisfactory, however, to the more nationalistic supporters of the American dogma, and the feeling that the Covenant violated that dogma was responsible in part for the eventual failure of the United States to enter the League.

Certain reactions against the undue extension of the doctrine have been discernible in the past two decades. Save on special occasions when it directly served their interests, the Monroe Doctrine has never been particularly popular among the Latin American republics; while the assumption of American hegemony by the United States and the growing tendency to use the doctrine as an excuse for selfish economic penetration have aroused active antagonism. Latin American leaders have complained of the fact that the doctrine has been interpreted by the United States alone—a point on which they have never been given satisfaction. Almost every administration since that of Wilson has insisted upon the purely national character of the principles of 1823 and upon the right of this country to determine their meaning and application. Attempts to provide for definition of the doctrine in the sense of an accurate delimitation have invariably failed. Yet some change in attitude may be noted. In an effort to relieve apprehension Secretary of State Hughes set forth at length the principles which governed the United States in dealing with the Latin American republics. He attempted also to justify the increasing number of interventions by the United States in the Caribbean area on the grounds of general international law and to dissociate them from the Monroe Doctrine. The memorandum published by the State Department during the Hoover administration follows the same direction and seeks to limit the application of the famous dogma. In 1929 the Committee on Foreign Relations of the Senate of the United States in transmitting the Kellogg-Briand Pact added a gloss, or separate report, in which the Monroe Doctrine was conservatively interpreted and based upon the principle of self-defense. The Roosevelt corollary of 1904 was definitely excluded.

In the popular mind the Monroe Doctrine has taken deep lodgment. It is likely to be invoked by persons ignorant of its history and interpretation in almost any dispute involving the relations of European and New World states

or even the relations of European states and the United States. The phrase itself serves in many instances as a convenient substitute for thought and as the basis of a successful appeal to prejudice and national feeling.

The intensity of this feeling is now well recognized abroad. It is doubtful whether any European government would today challenge the United States on a question involving the New World and with regard to which the Monroe Doctrine had been invoked; and even the most polite and learned discourses by American political leaders can succeed only partially in banishing the apprehensions which Latin Americans feel as to its possible interpretation. The degree to which the diplomatic or coercive action of European states in the New World should be tolerated by the United States is one on which different opinions might be held and ably defended; but that a powerful emotional complex exists of which statesmanship must take account is not to be denied.

It is perhaps needless to add that in the opinion of the best authorities the Monroe Doctrine is not international law. Its principles may be claimed perhaps as deductions from other principles truly legal, such as the right of self-defense or self-preservation. But it is in essence a national policy, or perhaps it is even better defined as an article of faith which like many others is more easily felt than accurately defined.

DEXTER PERKINS

See: IMPERIALISM; INTERVENTION; PAN-AMERICANISM.

Consult: United States, Library of Congress, *List of References on the Monroe Doctrine* (1919); Bradley, Phillips, *A Bibliography of the Monroe Doctrine 1919–1929*, London School of Economics and Political Science, Series of Bibliographies, no. 7 (London 1929); Moore, J. B., *A Digest of International Law*, 8 vols. (Washington 1906); Ford, Worthington C., "Genesis of the Monroe Doctrine" in Massachusetts Historical Society, *Proceedings*, 2nd ser., vol. xv (1900–02) 373–436; Perkins, Dexter, *The Monroe Doctrine 1823–1826*, Harvard Historical Studies, vol. xxix (Cambridge, Mass. 1927), and *The Monroe Doctrine 1826–67* (Baltimore 1933); Thomas, David Y., *One Hundred Years of the Monroe Doctrine 1823–1923* (New York 1923); Hughes, Charles Evans, *The Pathway of Peace* (New York 1925) pt. ii; Clark, J. Reuben, *Memorandum on the Monroe Doctrine*, United States, Department of State, Publication, no. 37 (1930); Alvarez, A., *The Monroe Doctrine* (New York 1924); Haring, C. H., *South America Looks at the United States* (New York 1928); Hyde, C. C., *International Law Chiefly as Interpreted and Applied by the United States*, 2 vols. (Boston 1922); Garner, J. W., *American Foreign Policies, an Examination and Evaluation of Certain Traditional and Recent International Policies of the United States* (New York 1928), especially ch. iv.

MONROE, JAMES (1758–1831), fifth president of the United States. By 1782 Monroe had formed an intimate friendship with Thomas Jefferson and begun his political career, which in its early stages was marked by a strong spirit of sectionalism and opposition to the federal constitution. After a short period in the United States Senate (1790–94) he was sent on a mission to France but accomplished little because of the French resentment aroused by the policy of the Washington administration in its attempts to reach an understanding with England. Monroe's excessive republican enthusiasm, which continued to color his political outlook throughout his entire career, soon brought him rebuke and eventually recall. After his return to the United States he entered Virginia politics. In 1803 he was sent abroad again on a diplomatic mission and together with Robert Livingston took the initiative in concluding the Louisiana Purchase treaty with Napoleon.

His subsequent diplomatic career in Spain and England was less successful and in 1807 he returned to the United States. In the following year his presidential ambitions became known and for a time alienated Madison; but after a brief period as governor of Virginia he was appointed secretary of state in Madison's cabinet and during part of the administration served also as secretary of war. In 1816 Monroe was elected to the presidency and he was reelected virtually unanimously in 1820. Throughout his career Monroe reflected rather than molded public opinion. In the presidency he exhibited capacity for administration rather than great qualities of leadership.

Monroe's most important act was the enunciation of the doctrine that has come to be known by his name. On December 2, 1823, he issued the famous message which warned the powers of continental Europe against intervention in or colonization of the American continents. Monroe's sympathy with republicanism was a factor in his declaration. Had it not been for Adams, Monroe would have abandoned the doctrine of the two spheres, for he wished to recommend the recognition of the Greeks at the same time that he warned Europe not to intervene in the former colonies of Spain in the New World. But although John Quincy Adams contributed much to this message, the principle of non-intervention was Monroe's and the message was issued on his own responsibility and partly on his own initiative. In domestic politics Monroe remained a sturdy champion of Jeffersonian

principles and Virginian conceptions of states' rights.

DEXTER PERKINS

Works: *The Writings of James Monroe*, ed. by S. M. Hamilton, 7 vols. (Boston 1898–1903); United States, Congress, *American State Papers*, Foreign Relations, vols. iii–v (1823–58).

Consult: Gilman, Daniel Coit, *James Monroe*, American Statesmen series (rev. ed. Boston 1898); Morgan, George, *The Life of James Monroe* (Boston 1921).

MONTAGU, CHARLES, EARL OF HALIFAX (1661–1715), English administrator and financier. Montagu prepared for holy orders at Trinity College, Cambridge, where he "outshined his contemporaries" in logic, ethics and philosophy. In 1689 he became Whig member of Parliament for Maldon, a constituency which he represented with distinction until he was returned for Westminster in 1695. Although a faithful adherent of the house of Orange and of an arrogant nature he aimed at conciliating monarchical power with democratic principles and constitutional liberties.

Montagu's main achievement was to reorganize public finance and restore public credit. In 1694 the Bank of England was floated under his aegis to provide large internal loans. In 1696 with Newton, Locke and Somers he organized the great recoinage, issuing Exchequer bills to tide over monetary stringency. These interest bearing negotiable government securities became a permanent feature of British finance. He was made chancellor of the Exchequer in 1694 and resigned the post in May, 1699, when his influence had waned. Raised to the peerage in 1700, he successfully fought an impeachment and recovered some of his popularity. Montagu was also one of the founders of a new company trading with India.

R. D. RICHARDS

Works: *The Works and Life of the Right Honourable Charles, Late Earl of Halifax*, ed. by W. Pittis (2nd ed. London 1716).

Consult: Macaulay, Thomas B., *The History of England, from the Accession of James the Second*, ed. by C. H. Firth, 6 vols. (new ed. London 1913–15) vols. v–vi; Andréadès, A. M., *Histoire de la Banque d'Angleterre*, 2 vols. (Paris 1904), tr. by C. M. Meredith, 1 vol. (2nd ed. London 1924) p. 57–59; Richards, R. D., *The Early History of Banking in England* (London 1929) p. 140–45.

MONTAIGNE, MICHEL DE (1533–92), French philosopher. The attempt of Montaigne to comprehend life in its own immediate terms without recourse to religious or metaphysical postulates derives from the philosophers of late antiquity. Modern science had not yet developed to the point where it could offer an integrating principle to replace the obsolescent religious faith of the Middle Ages. To a type of mind like Montaigne's this principle could be derived only from the concrete data of human experience, which were to be gleaned in part from historical records and the reflections of philosophers but to a greater degree from subjective introspection and attentive observation of the daily flux of life itself. The rule of life which Montaigne most consistently emphasized was that the individual should constantly gird himself against the buffetings of fortune. From this attitude of precaution toward the unknowable forces which threaten to overwhelm man spring Montaigne's political and social preconceptions. Convinced of the wisdom of preserving the institutions and laws handed down by tradition, he was skeptical of all who wished to change the already existent. In the presence of the moral and social manifold with its baffling complexities the mind of man, he held, is helpless. Finding the only safe and reasonable refuge within he recoiled from all efforts to regulate personal activity by external agencies or by artificial norms. He had little in common either with the ambitious aristocratic type of the seventeenth century or with the calculating bourgeois *arriviste* of the eighteenth. Montaigne's personal and intellectual life are the classic embodiment of the recurring type of individual who strives to master life and seeks inner harmony and freedom by fortifying his personality. Many of the basic implications of Montaigne's thought were developed more systematically and given a more didactic tinge by Pierre Charron (1541–1603), whose motto, *paix et peu*, epitomizes his scheme of values.

B. GROETHUYSEN

Works: *Les essais de Michel de Montaigne publiés d'après l'exemplaire de Bordeaux*, ed. by Fortunat Strowski, François Gebelin and Pierre Villey, 4 vols. (Bordeaux 1906–20).

Consult: Strowski, Fortunat, *Montaigne* (2nd ed. Paris 1931); Lanson, G., *Les essais de Montaigne* (Paris 1930); Gide, A., *Essai sur Montaigne* (Paris 1929), tr. by S. H. Guest and T. E. Blewitt as *Montaigne, an Essay in Two Parts* (London 1929); Groethuysen, B., "Montaignes Weltanschauung" in *Philologisch-philosophische Studien, Festschrift für Eduard Wechssler*, Berliner Beiträge zur romanischen Philologie, vol. i (Jena 1929) p. 219–28; Villey, P., "La place de Montaigne dans le mouvement philosophique" in *Revue philosophique*, vol. ci (1926) 338–59; Armaingaud, Arthur, "La morale de Montaigne" in *Revue*

politique et parlementaire, vol. cxvii (1923) 452–62, and vol. cxviii (1924) 139–52; Gmelin, Hermann, "Montaigne und die Natur" in *Archiv für Kulturgeschichte*, vol. xxi (1930–31) 26–43; Hunt, R. N. C., "Montaigne and the State" in *Edinburgh Review*, vol. ccxlvi (1927) 259–72; Villey, P., *L'influence de Montaigne sur les idées pédagogiques de Locke et de Rousseau* (Paris 1911); Türck, S., *Shakespeare und Montaigne, ein Beitrag zur Hamlet-Frage*, Neue Forschung, no. 8 (Berlin 1930); Bouillier, V., "Montaigne et Goethe" in *Revue de littérature comparée*, vol. v (1925) 572–93; Roy, P., *Les sources de Charron* (Paris 1906).

MONTALEMBERT, COMTE DE, CHARLES FORBES RENÉ DE TRYON (1810–70), French politician, historian and sociologist. A visit to Ireland in 1830, where he met O'Connell, converted Montalembert into a liberal, intent on reclaiming the liberties of the church and the rights of peoples. Deeply influenced by Lammenais, with whom he cooperated in the struggle to bring about separation of church and state, he inclined for a time to consider as a supreme ideal the full and absolute liberty of opinion and needs; but with growing pressure from the Catholic church he retreated to a more orthodox position. The Holy See, although still condemning what it considered vestiges of his former tendencies, was pleased with Montalembert for introducing French Catholics into political life and into the parliamentary sphere and for defending in his speeches and writings the liberties of the church. Montalembert's defense of these liberties on the grounds of the common law and of parliamentary institutions—which he praised in *De l'avenir politique de l'Angleterre* (Paris 1856)—brought about in 1850 the passage of the Falloux law granting liberty of instruction. The same liberties which he sought for the church he also sought for those peoples whom he considered oppressed, especially the Irish and the Poles. His sympathy with the laboring classes in France is revealed by his efforts during the early stages of the industrial revolution in France to secure some measure of legal protection for various types of workers; his famous speech in 1840 on child labor has established his position as one of the early precursors of the social Catholic movement.

Montalembert's *Les moines d'occident depuis Saint Benoît jusqu'à Saint Bernard* (7 vols., Paris 1860–77; tr. as *The Monks of the West*, 6 vols., 2nd ed. London 1896), despite certain minor inaccuracies, marks an era in the social history of religious institutions. Emphasizing such factors as the role played by the monks in clearing the lands and in impressing on the people the importance and dignity of manual labor, the author reestablished historical truths unappreciated by eighteenth century philosophers who like Condorcet were blinded by the abuses of certain mendicant orders to the social utility of monasticism. The monk as portrayed by Montalembert is not only an apostle of the Gospels but also a commentator on *Genesis*, who presents to the people the earth, that divine gift; who retells them the commandment of God the creator and teaches them the art of practising it. The positivist historical school, represented by Littré in the *Journal des savants* of 1862 and 1863, declared itself in accord with Montalembert in considering the Middle Ages thus understood as "the heroic age of Christian society," while the subsequent studies of Léopold Delisle, d'Arbois de Jubainville, Lamprecht, Dom Besse and Dom Berlière have confirmed this homage.

GEORGES GOYAU

Other important works: *Discours*, ed. by Camille de Meaux, 3 vols. (2nd ed. Paris 1892); *Pages choisies, avec lettres inédites*, ed. by V. Bucaille with introduction by Georges Goyau (Paris 1920).

Consult: Lecanuet, R. P., *Montalembert*, 3 vols. (Paris 1895–1902); Littré, Émile, *Études sur les barbares et le moyen-âge* (3rd ed. Paris 1874) p. 114–94; Calippe, Charles, *L'attitude sociale des catholiques français au XIXe siècle*, 3 vols. (Paris 1911–12) vol. ii; Soltau, R., *French Political Thought in the Nineteenth Century* (New Haven 1931) p. 81–83, 171–76. See also articles in *Revue générale*, vol. xcv (1912).

MONTANARI, GEMINIANO (1633–87), Italian mathematician and monetary theorist. Montanari was professor of mathematics at Bologna and later professor of astronomy and meteorology at Padua. He was the author of two works on money, *Breve trattato del valore delle monete in tutti gli stati* (1680) and *La zecca in consulto di stato* (*Della moneta*) (1683–87), which in subtlety and penetration had few equals in their day. Neither, however, was published until seventy years after the author's death. Both were included in the Custodi collection of reprints (*Scrittori classici italiani . . .*, vol. xliv, Milan 1804) and the second was again reprinted in Graziani's *Economisti del cinque e seicento* (Bari 1913, p. 239–379).

Following the lead of Davanzati, Montanari gives what is probably the first clear cut statement of the quantity theory *stricto sensu*, departing to this extent from the more widely held view of Bodin. In their non-monetary uses the

precious metals are valued like other things according to their scarcity relative to the "need, esteem, and desire" which men have for them, and Montanari seems to imply that their values in the two uses tend to be equalized. He rejects the idea that the ratio between gold and silver may be regarded as practically permanent; new supplies from America, use in the arts and the drain to the East cause it to fluctuate. A sturdy opponent of debasement, Montanari describes with great skill its effects upon industry and the public revenues. He concedes the debasement of subsidiary coins, but only within safe limits. His discussion of the problem of fixing the mint ratio and his exposition of the working of Gresham's law show much insight. Because of his general emphasis on scarcity and the subjective factor in the determination of value, Montanari is considered by some as the precursor of the psychological school in economics.

A. E. MONROE

Consult: Graziani, Augusto, *Le idee economiche degli scrittori emiliani e romagnoli sino al 1848* (Modena 1893); Monroe, A. E., *Monetary Theory before Adam Smith* (Cambridge, Mass. 1923); Arias, Gino, "Les précurseurs de l'économie monétaire en Italie" in *Revue d'économie politique*, vol. xxxvi (1922) 743–50.

MONTCHRÉTIEN, ANTOINE DE, SIEUR DE VATTEVILLE (*c.* 1575–1621), French economist, dramatist and poet. Montchrétien had already written several of his tragedies, which enjoyed great popularity and have some intrinsic merit, when he was forced to flee to England to escape the consequences of a duel. Subsequently he visited Holland, and after returning to France shortly before 1610 and entering upon the career of a hardware manufacturer he embodied the results of his extended observations in his *Traicté de l'oeconomie politique* (Rouen 1615; new ed. by T. Funck-Brentano, Paris 1889), which he dedicated to Louis XIII and the queen mother, Marie de Médicis. He was killed while attempting to organize a Huguenot uprising in Normandy, although he is not definitely known to have adhered to the reformed religion.

While Montchrétien created the term political economy, his tract lacks the remotest resemblance to a scientific work. It is a rather poorly arranged, stylistically undistinguished compilation of economic observations, coupled with practical proposals for an economic policy and replete with digressions and irrelevancies. Both the originality and the influence which have been attributed to it by various writers since its resurrection in the latter part of the nineteenth century represent a vast exaggeration. Montchrétien borrowed heavily from Bodin and seems totally unaware of the writings of his famous compatriot Laffemas. The principal interest of the *Traicté* lies in the fact that as a record of the economic and industrial state of France in 1615 it constitutes a precious document for economic historians. A typical mercantilistic pamphlet, it is motivated by the author's interest in French economic growth and by his desire to prevent foreigners from participating in the benefits. Montchrétien is, however, free from the mercantilistic practise of measuring national wealth by the supply of gold and silver. His program bases the wealth of the state upon the product of the labor of its citizens. In the first section of his work he treats of industry, which he depicts as the first consideration in national economic development. After lauding the abilities of French artisans and the richness of French resources he suggests state intervention to assure the growth of powerful native industries in iron, wool, silk, leather, glassmaking and printing; state assistance to French workers; and the exclusion of foreign workers. In the second section he discusses commerce, demonstrating that France lags woefully behind its neighbors in shielding native merchants from foreign competition, demanding that it take advantage of its potential economic independence of other nations and recommending heavy export duties on French raw materials and the prohibition of imports in manufactured articles. In the third section he unveils spacious vistas for the future activity of Frenchmen in the field of colonization.

PAUL HARSIN

Consult: Bousquet, G. H., *Essai sur l'évolution de la pensée économique* (Paris 1927) p. 9–12; Cole, C. W., *French Mercantilist Doctrines before Colbert* (New York 1931) p. 113–61; Funck-Brentano, T., Introduction to his edition of the *Traicté*, p. i–cxvii; Dessaix, P., *Montchrétien et l'économie politique nationale* (Paris 1901); Lavalley, P., *L'oeuvre économique de Antoine de Montchrétien* (Caen 1903); Harsin, P., *Les doctrines monétaires et financières en France du XVIe au XVIIIe siècle* (Paris 1928) p. 75–77; Ashley, W. J., *Surveys, Historic and Economic* (London 1900) p. 263–67.

MONTEFIORE, SIR MOSES (1784–1885), Anglo-Jewish philanthropist. Born of Italian parentage settled in London in the middle of the eighteenth century, Montefiore played an important role in the banking world until 1821, when he retired to devote himself to public affairs. He was sheriff of London in 1837 and was made a baronet in 1846. Sir Moses was allied by

blood and financial interests to the Rothschilds and other Anglo-Jewish leaders, with whom he took a foremost part in the movement for the civil and political emancipation of the Jews in England. As president of the Board of Deputies of British Jews from 1835 to 1874 he played a leading part in the efforts of Anglo-Jewry to improve the condition of Jews in various parts of the world. This work based on current liberal and philanthropic theories had two aspects: the westernization of Jews in backward countries and the wiping out of legislative and administrative discrimination against them. His successful intervention in the Damascus blood accusation case of 1840 was the first impelling force toward international Jewish solidarity in modern times. His subsequent missions between 1846 and 1872 to Russia, Rome, Morocco and Rumania on behalf of persecuted Jews added to his international reputation. He visited Palestine seven times between 1827 and 1875, was deeply interested in the project of Jewish resettlement and ushered in a new epoch of Jewish nationalism, which took an economico-political turn with the later rise of Zionism. His exceptional personal standing helped win the support of the British government for the diplomatic endeavors of himself and his board and encouraged the development of an informal tradition of British protection of Jews in the Turkish Empire which later affected British policy in the question of a Jewish National Home in Palestine.

PAUL GOODMAN

Consult: *Diaries of Sir Moses and Lady Montefiore*, ed. by L. Loewe, 2 vols. (London 1890); Wolf, Lucien, *Sir Moses Montefiore* (London 1884); Wolbe, Eugen, *Sir Moses Montefiore* (Berlin 1909); Goodman, Paul, *Moses Montefiore* (Philadelphia 1925), with complete bibliography.

MONTEMARTINI, GIOVANNI (1867–1913), Italian economist and reformer. A classmate of Cossa at the University of Pavia, Montemartini later studied under Carl Menger at Vienna and under Pantaleoni at Rome. He was professor of economics at Pavia and Rome, editor of the *Giornale degli economisti* from 1904 to 1910 and author of many articles in this magazine and in *Critica sociale*.

Through the Ufficio del Lavoro della Società Umanitaria, which he founded in 1902 at Milan, he investigated various aspects of the labor problem. He created in 1903 the national labor office of the Ministry of Agriculture, Industry and Commerce, through which he conducted research preparatory to the drafting of social legislation; and in 1905 with Pantaleoni and de Viti de Marco he examined for the government the Lubin proposal for an International Institute of Agriculture. In 1911 he reorganized the government's general statistical bureau. Montemartini was the leading theorist of the municipal reorganization and municipal ownership movements and a president of the Federazione Nazionale delle Aziende Municipalizzate. A member of the Social Democratic party, he approached social problems from the point of view of the English Fabians to a degree unusual on the continent.

BENVENUTO GRIZIOTTI

Important works: *Municipalizzazione dei publici servigi* (Milan 1902, 2nd ed. 1917); *Il risparmio nella economia pura* (Milan 1896); *Teorica delle produttività marginali* (Pavia 1899); *Lezioni di economia pura* (Rome 1905); *Le curve tecnichi di occupazione industriale*, Italy, Direzione Generale della Statistica e del Lavoro, Annali di Statistica, 5th ser., vol. i (1912).

Consult: Agnelli, Arnaldo, "In memoria di Giovanni Montemartini" in *Giornale degli economisti*, 3rd ser., vol. xlix (1914) 377–88.

MONTESQUIEU, BARON DE LA BRÈDE ET DE, CHARLES DE SECONDAT (1689–1755), French political theorist. Montesquieu's political writings cover the generation of intellectual transition during which the rigidity of French classical thought was yielding to the new currents of English philosophy and natural science. Priding himself on his sense of moderation and balance, he drew without compunction on both traditions. In the spirit of Bacon he amassed, diligently if not critically, a wealth of empirical data but did not feel called upon to disclaim the broader deductive principles of Cartesianism. He recognized the basic soundness of the environmentalist position as it had been sketched by numerous writers of antiquity and post-Renaissance Europe and devoted his chief efforts to elaborating and refining their rather intuitive formulae regarding the influence of natural environment on the culture of a particular people; but he did not abandon altogether the older faith that in spite of wide regional variations there was a higher rational principle on which could be predicated universal norms.

In his earliest and least earnest work, the *Lettres persanes* (2 vols., 1721), he approaches the problem of the relation between personal and impersonal factors in history from the optimistic viewpoint of the early Enlightenment. That man, thanks to his rational faculties, can free himself from the sway of nature and prejudice is illus-

trated in the half ironic, half utopian sketch of the troglodyte state. In Montesquieu's next work, *Considérations sur les causes de la grandeur des romains et de leur décadence* (1734), mankind tends to be obliterated in the play of vast impersonal forces which work themselves out inexorably in the course of history. The decrees of kings, military victories and defeats, the relationships between ruler and ruled, become but incidental phases in the flowering and decay of the seminal principle of Roman life.

The attempt to strike a satisfactory balance between personal and impersonal factors is likewise the motive of Montesquieu's most enduring work, *De l'esprit des lois* (2 vols., 1748), in which he conceives the spirit of laws as those interrelationships existing between the laws of a state and the various types of factors, material and ideal, which intermingle, in a highly complex pattern, to mold the "esprit général" of a society. Sensitive to the delicate complexity of these organic relationships, Montesquieu was led to a position of skepticism regarding the capacity of the individual lawgiver to effect sudden improvements in the existing body of law. Even though on rational grounds radical changes might seem called for, the wise legislator, out of respect to the realities of the present and the accumulated wisdom of the past, will rest satisfied with the next best and even with that which is least undesirable.

In the course of his attempt to correlate the laws of a state with the material and ideal factors governing the life of the society, Montesquieu postulated, in the approved manner, three types of government—republic, despotism and monarchy; these in turn he derived from three deeper lying principles, largely moral and emotional in character but with roots traceable in many cases to fundamental geographic, and geographically determined economic, factors. Although as an unrepentant stoic and pupil of Polybius he felt a recurring nostalgia for the patriotic *virtus* on which rested the democratic institutions of the Roman Republic, he gave no indication of an unrealistic desire to transplant them from the soil of the neighborly city-state of antiquity, long since passed away. The prevalence of fear throughout a society, which constituted for Montesquieu the prerequisite for despotism, could be explained, as in the case of his somewhat inaccurate oriental examples, by climate and climate conditioned customs and institutions or, as in cases nearer home, by an inevitable tendency of the true monarchy to relapse into despotism as a result of the decay of that general sense of honor on which are built vigorous monarchical institutions.

In attempting to draw a line between despotism and monarchy proper Montesquieu went far beyond older political theorists, although he was not unaware of the observations of Polybius and Locke regarding the division of powers within a government. With an ever realistic, although not altogether disinterested, eye on the current struggles of the privileged aristocratic groups in France to stem the tide of royal aggression, he came to regard despotism less as a type than as a tendency, and sought escape therefore, not so much in the enumeration of abstract rights and formal guaranties as in the healthy functioning of aggressive intermediate groups, which in defending their own privileges and prerogatives should through the clash of living forces check the tendency toward despotism and at the same time guard against the predominance of any single corporation. Conversely, liberty became less a transcendental essence, emanating from a mythological state of nature in a remote past, than an immanent principle finding repeated substantiation through the interplay of equally balanced rival powers within the state.

The middle of the road position on which Montesquieu prided himself is a primary cause of his enduring influence. Although his system as a whole, by reason of its complexity and elasticity, tended to elude most of his contemporaries, it was studded with neatly turned maxims and formulae and amply documented theses which could be adapted to substantiate a variety of claims. The mid century liberals, while chiding Montesquieu's tendency to become lost in the particular and the relative, were intrigued in the main by his graceful apostrophes to liberty and the right of remonstrance; his enthusiasm for British institutions; his skilful thrusts at despotism, slavery, religious intolerance, arbitrary fiscal policies and inhuman penal codes; and perhaps above all by his lyrical eulogy of commerce as a stimulus to the spread of civilization and cosmopolitanism. His elaborately developed thesis of the Germanic origins of liberty and his recognition, however ambiguous, of the right of representation lent themselves to adaptation by a more democratically minded generation of libertarians, such as Mably, who sought to justify on historical grounds the doctrines of popular sovereignty and popular participation in government. The nobility, engaged in that increasingly strenuous offensive against the mon-

archy which was to provide the opening chapters of the French Revolution, repeatedly invoked the authority of Montesquieu to justify the privileges and prerogatives of a hierarchic order, while the defenders of the harassed monarchy invoked the letter, if not the spirit, of his chief work to prove the "subordination and dependence" of the aristocracy. When the third estate, after a rather prolonged wavering between its dread of despotism and its more traditional antipathy to the feudal orders, finally in 1789 decided to take over the revolution into its own hands, it set out along the uncluttered paths cleared by the doctrinaire critics of Montesquieu and recently blazed by the American colonists.

Although many of these antitraditionalist presuppositions have continued to inspire liberal ideology and rhetoric, the more realistic problems involved in setting up a working constitution have been the primary factor in perpetuating the influence of Montesquieu. When it became apparent, in France as well as in America, that the phrasecology of natural rights was opening the door to less responsible elements in the population, the doctrine of the balance of powers, as abstracted from Montesquieu by Blackstone and Delolme, recommended itself as at least one means of insurance against domination by a mass controlled legislature. In the post-revolutionary period the revived prestige of British institutions and the growing alarm in a number of individualist quarters concerning the popular sovereignty corollary of an all powerful legislative majority opened the way to a widespread dissemination, particularly among the constitution makers in France and Germany, of the abbreviated, Anglicized version of Montesquieu's basic theory.

To a more limited extent, although with far less abstraction, Montesquieu's influence has been perpetuated by the more intellectual and more openly conservative groups deriving from the romantic reaction against the artificial codifications of the revolutionary assemblies. His sense, however incipient, of the complexities of the social organism, of the interrelations between society and state, of the creative faculty of the national folk spirit, of the sanctity of traditional norms, of the identity of interests as between individual and collectivity, of the interplay between absolute and relative, of the balance between ideal and material forces and of the half irrational factors determining the genesis of primitive Germanic and mediaeval legal institutions has struck a responsive chord among the social and legal philosophers as well as the conservative apologists of a new intellectual order. With an enthusiasm withheld from any of his fellow *philosophes*, he has been offered the sustaining hand of a later and better equipped scholarship and accorded a rank little below that which he enjoyed in his own rationalistic age.

PETER RICHARD ROHDEN

Consult: Dedieu, Joseph, *Montesquieu et la tradition politique anglaise en France* (Paris 1909), and *Montesquieu* (Paris 1913); Carcassone, Élie, *Montesquieu et le problème de la constitution française au XVIIIe siècle* (Paris 1927); Faguet, Émile, *La politique comparée de Montesquieu, Rousseau et Voltaire* (Paris 1902); Lipschütz, Michael, *Montesquieu als Geschichtsphilosoph* (Strasbourg 1927); Klemperer, Victor von, *Montesquieu*, Beiträge zur neueren Literaturgeschichte, n.s., vols. vi–vii, 2 vols. (Heidelberg 1914–15); Martin, Kingsley, *French Liberal Thought in the Eighteenth Century* (London 1929) ch. vi; Grant, A. J., "Montesquieu" in *The Social and Political Ideas of Some Great French Thinkers of the Age of Reason*, ed. by F. J. C. Hearnshaw (London 1930) ch. v; Michel, E. F., *Die anthropogeographischen Anschauungen Montesquieus* (Bensheim 1915); Fuchs, Vera, *Die strafrechtlichen Anschauungen Montesquieus und Friedrichs des Grossen* (Zurich 1924); Cattelain, Fernand, *Étude sur l'influence de Montesquieu dans les constitutions américaines* (Besançon 1927); Fickert, Artur, *Montesquieus und Rousseaus Einfluss auf den Vormärzlichen Liberalismus Badens*, Leipziger historische Abhandlungen, vol. xxxvii (Leipsic 1913); Benno, Gabriel, *La constitution britannique devant l'opinion française de Montesquieu à Bonaparte* (Paris 1931); Meinecke, Friedrich, "Montesquieu, Boulainvilliers, Dubos" in *Historische Zeitschrift*, vol. cxlv (1931) 53–68.

MONTFORT, SIMON DE, EARL OF LEICESTER (1208?–65), English constitutional reformer. Montfort was the son of the leader of the Albigensian crusade and Amicia, elder sister and heiress of Robert, fourth earl of Leicester. The earldom of Leicester ultimately came to him in 1231. His position among the English baronetage was rendered secure by his marriage with the sister of King Henry III in 1238. As steward of Gascony from 1248 to 1254 he made many enemies by his drastic conduct of affairs and gradually alienated the king, who was jealous of him on personal grounds. Association with Robert Grosseteste and the Franciscan Adam Marsh reenforced Montfort's growing opinion that arbitrary power and government in which the governed took no share were intolerable. These convictions brought him into line with a group among the English baronetage which was becoming increasingly dissatisfied with Henry III's government. The king's acceptance of the Sicilian crown for his son Edmund, the rapacity of his administrators and the absence of any clear

direction in royal policy precipitated the coup d'état of 1258 which substituted a baronial council for royal autocracy. No evidence exists, however, that Simon considered the Provisions of Oxford, which established baronial government, to have gone far enough. His sympathies were with the knights, vavasors and burgesses, whose claims the Provisions of Westminster in October, 1259, were designed to meet; and while baronial leaders were for controlling the crown, much circumstantial evidence points to Montfort's desire to encourage in the government of the shires the smaller local landholder. When the more conservative section of the reforming baronetage drew back after Henry III had secured absolution from his oath to the Provisions of Oxford, Montfort came forward as the leader of a more radical party. Challenging the king's government he defeated Henry and Prince Edward at the battle of Lewes and in the *Forma regiminis* established a provisional government; the chief event of this was his summoning of a Parliament on January 20, 1265, to which the sheriffs were "to cause to come" two knights from each shire, while two deputies were summoned from Lincoln, York "and the other boroughs of England." This was the first time that representatives of the urban populations were summoned to Parliament. Although the summons of knights and burgesses was undoubtedly intended to strengthen the coalition of which Montfort was leader and although the Parliament was obviously selective, the precedent was set. The new government was brought to an end by the victory of Prince Edward and the lords marchers at Evesham in August, 1265, and Montfort's death in battle. The records of the fierce reprisals which followed and of the unrest throughout the country during the next few years testify to the support given to Montfort by the local gentry and townsmen of England.

E. F. JACOB

Consult: Bémont, Charles, *Simon de Montfort, comte de Leicester, sa vie . . . , son rôle politique en France et en Angleterre* (Paris 1884), English ed. by E. F. Jacob (Oxford 1930); Jacob, E. F., *Studies in the Period of Baronial Reform and Rebellion, 1258-1267* (Oxford 1925); Treharne, R. F., *The Baronial Plan of Reform, 1258–1263* (Manchester 1932); Tout, T. F., *Chapters in the Administrative History of Mediaeval England*, Manchester University, Publications, Historical Series, nos. 34-35, 48-49, 57, vols. i–v (Manchester 1920–30) vol. ii; Pasquet, D., *Essai sur les origines de la Chambre des communes* (Paris 1914), tr. by R. G. D. Laffan (Cambridge, Eng. 1925).

MONTS DE PIÉTÉ. *See* PAWNBROKING.

MOONEY, JAMES (1861–1921), American ethnologist. While employed on the Richmond (Indiana) *Palladium* Mooney developed an intense interest in the American Indians. In 1885 he planned to go to Brazil in pursuit of his hobby when he met in Washington J. W. Powell, the director of the Bureau of American Ethnology, who gave him a position on the bureau staff which he held until his death. Mooney's subsequent studies, devoted mainly to the eastern Cherokee and the Kiowa but also dealing with the Cheyenne and other Plains tribes, are notable contributions to the knowledge of Indian life in aboriginal times and of the peyote cult. His general conclusions regarding the Indian populations north of Mexico, which have been made the basis for all subsequent work on the subject, were published after his death.

Mooney was a field worker and a student of Indian history rather than an anthropologist in the present connotation of the term, but indirectly he contributed much to the progress of academic anthropology. He was one of the first American anthropologists to maintain that there was at least one exception to a universal primitive matriarchate, stating that no trace of any such stage was to be found in the Kiowa organization. His extensive report on the ghost dance religion is widely regarded as the type study of a messianic movement among primitive people.

JOHN R. SWANTON

Important works: *The Siouan Tribes of the East*, Bureau of American Ethnology, Bulletin, no. 22 (Washington 1894); *The Aboriginal Population of America North of Mexico*, Smithsonian Miscellaneous Collections, vol. lxxx, no. 7 (Washington 1928); "The Ghost-dance Religion and the Sioux Outbreak of 1890" in Bureau of American Ethnology, *Fourteenth Annual Report 1892–93*, 2 pts. (Washington 1896) pt. ii, p. 641–1103.

Consult: *American Anthropologist*, vol. xxiv (1922) 209–14, containing a bibliography of Mooney's printed works.

MORALE. Group morale is group persistence in the pursuit of collective purposes. Evanescent enthusiasm is no evidence of morale, although enthusiasm may strengthen it. Tenacity in the face of adversity is the most unequivocal index of high morale, although one of the many shadings of the word covers efficient and upright service in unspectacular situations.

Since morale depends upon subordinating the plurality of individual possibilities to the unity of collective purposes, all that aids in identifying the person with the group symbols is pertinent to the understanding and management of mo-

rale. Group symbols include terms which name the group, indicate its goals and methods and sustain its hope of victory. Primitive communities quite spontaneously use many ways of stimulating the process of identification. The war dances and the magical rites which arouse individual impulses reorganize them about the leaders, emblems and projects of the whole. Modern industrial society has extended its technical attitude toward material things to include human relations, and the building and maintenance of morale have become a distinct social technique with many resources at its disposal. The devices of psychology, social welfare and public health are variously used in factory, school, press, public gathering and other approaches to public opinion in order to mobilize the community in war, disaster and depression.

It is less difficult to evoke than to sustain mass action, since the individual displays many degrees of conscious and unconscious rebellion against subordinating his life completely to a common project. Obviously the problem is most acute when the group is weak or makes little progress or suffers severe setback. Impulses which are not discharged against the out group turn back against the group itself. Indeed an instant and overwhelming threat to security, such as a surprise attack by an armed enemy under cover of darkness, may dissolve all the bonds of attachment to the symbols of the group and leave the desocialized individuals in a wild scramble for safety. When the situation is less acute a sag in group morale may be taken up by diverting attention to a new and weaker enemy. So a crusade against the rich peasant may temporarily supersede a preoccupation with foreign enemies. When the enemy cannot be readily changed, fresh interest may be aroused by giving the same "objective" situation a symbolic redefinition. So it may be said that the struggle has entered a new and portentous phase and that the war has ceased to be an ordinary conflict; it is a crusade to make the world safe for this or that. Accumulating hostilities to the purpose in hand may be disposed of also by means of incidental activities that do not interfere substantially with the overt acts upon which the future of the enterprise depends. Sexual indulgence, intoxication and diverting spectacles are among the means through which inconvenient tensions may be discharged. Many of these activities violate the moral standards (mores) of the group, yet they become tolerated as a kind of allowed licentiousness (countermores). No groups, from armies to students, can be held to "relevant" effort without opportunities for the "irrelevant."

One of the special problems which arise in connection with the channels of "irrelevance" is the extent to which hostilities may be permitted expression in direct verbal criticism of the policies and leaders of the group. It is evident that decisive action in a crisis demands central command and implicit obedience; it is equally evident that men inured to democracy are inclined to resent arbitrary commands. Western civilization has witnessed so many concessions to individual assertiveness that concessions are nowhere to be avoided, not even in the military establishments.

Experience shows that "harmless" means of dissipating tensions do not eradicate some serious attacks upon the integrity of the group. A leader may be publicly and pointedly insulted; no alacrity may be shown in the execution of apparently reasonable orders. Such acts are breaches of discipline in the actual as well as in the formal sense of the word. They demand treatment which will strengthen rather than weaken the morale of the entire group. If substantial measures are taken, such as imprisonment, mutilation or execution, the group conspicuously loses some of its possible assets. It is for this reason that ceremonial as distinguished from substantial methods of reincorporating the erring one within the group remain important. Ceremonies of repentance and forgiveness in family, religious, party and miscellaneous group relations powerfully aid in sustaining morale. Yet the role of the ceremony is very complex, since merely ceremonial methods of dealing with a breach may stimulate further breaches, sometimes by failing to satisfy the individual's unconscious desire for punishment. In the latter case he is driven to further aggressions against the prevailing order so that he may provoke the substantial punishment which relieves his unconscious sense of guilt.

Since every collective enterprise may be considered in relation to morale, any discussion of the subject threatens quickly to reach a degree of generality which deprives it of much value unless brought in relation to typical situations. The building and maintenance of morale in war time are the problems around which the largest literature has grown.

Among the factors which contribute to low morale in the army are bad nourishment and fatigue, isolation, darkness and suspense. Marked

disproportion between effort and result, continued failures and real or imagined inferiority also produce serious disturbances to morale. When an environment gets a bad name, like "Hell's Kitchen" in New York, suspense increases at every evidence of indecision on the part of the command. Indeed the terse formula runs, "Order, counterorder, disorder." Thus the higher in the scale of command fear or indecision is produced by the enemy, the more disastrous is the demoralization of the troops. Fear among the men shows itself in many forms, from that diffuse state of uneasiness when they begin to get "rattled" and any adverse event exerts an undue influence to the extreme of terror, which is characterized by a loss of self-control and exhibits itself in utter helplessness or panic. In the intermediate states of fright the men show many physical or mental symptoms of disorganization, but they are nevertheless able to master themselves sufficiently to perform their tasks.

The control of fear may proceed by diverting attention from the immediate danger by courageous example, by working men up beforehand to a full realization of their peril and to the acceptance of the situation once and for all, by stimulating a belief in fatalism, by encouraging religious belief in a life after death, by familiarity and friendship between officers and men. The nature of command has been somewhat redefined, as indicated by the French formula *Commander, c'est aider*, under the influence of modern psychology and modern individualism. The high command today is at such a remove from the troops that propaganda must be extensively used in order to maintain confidence. In some respects the role of the officer in immediate contact with the men has grown in importance, and the modern officer's training emphasizes the psychological aspects of his function.

Large modern armies include many personalities who are particularly unfitted without special attention to endure the stress of fighting. Mental disorders (particularly the neuroses) have become conspicuous problems. In general it seems that the less literate and intelligent soldiers develop bodily symptoms (hysteria), while the more literate and intelligent develop obsessional and similar neuroses in which the symbolizing functions play a prominent part. For the latter modern psychopathology is particularly well adapted even as a preventive measure, since a greater degree of self-understanding may enable the individual to detect the irrelevant nature of many of his incipient escapes from the reality around him.

A high morale among the non-fighting population is imperative during modern warfare, since the front is vitally dependent upon the factory hand and the farmer and since rapid communication enhances the importance of civilian attitudes in relation to the soldier. To maintain such a morale a wide and often highly organized use is made of the techniques of propaganda and censorship.

With the intensification of intergroup conflict in modern society the maintenance of public morale in both war and peace becomes particularly important if the status quo is to be preserved. In maintaining the morale of the whole in the face of a disaffection in some of its parts the governing powers are faced, however, with the conflict of two opposing purposes—the maintenance of the nation as a fighting entity and the rigorous suppression of what are considered dangerous elements. Military leaders must decide, for example, whether mass military training stimulates patriotic indoctrination more than it puts arms and skill in the hands of disaffected elements in the community, such as some elements among the peasantry in the Soviet Union and among the city wage earners in western Europe.

The problem of maintaining morale is very grave also during crises other than war, such as disaster and depression. But during such times as economic crises it is difficult under a system of undirected individualism to define issues with the clarity and general emotional appeal which would make them effective as focusing points for morale. In large social units, the general recognition of violence as a means of settling international difficulties serves even in peace time to maintain a certain working consensus regarding the symbols of collective purpose, which is the primary requisite of morale.

HAROLD D. LASSWELL

See: PROPAGANDA; CENSORSHIP; WAR; MILITARY DESERTION; MUTINY.

Consult: Hall, G. Stanley, *Morale* (New York 1920); Maxwell, W. N., *A Psychological Retrospect of the Great War* (New York 1923); Lasswell, H. D., *Propaganda Technique in the World War* (New York 1927); Bartlett, F. C., *Psychology and the Soldier* (Cambridge, Eng. 1927); Hellen, G. von der, *Die Erziehung zum Soldaten* (Graz 1931); Lebaud, P. C. E., *Maniement moral de la troupe* (Paris 1924); Manceau, Émile (Émile Mayer), *La psychologie du commandement* (Paris 1923); Brousseau, A., *Essai sur la peur aux armées 1914–1918* (Paris 1920); Wardle, M. K., "Notes on Fear in War" in *Army Quarterly*, vol. iv (1922) 263–73.

MORALES, AMBROSIO DE (1513–91), Spanish historian and archaeologist. Morales, who became a cleric, received a humanistic education at the universities of Salamanca and Alcalá and taught at the latter institution. His erudite dissertations, polemics and other writings cover linguistic, hagiographical, archaeological and historical subjects. Morales was very devoted to Philip II, who appointed him royal chronicler in 1563 and provided him with all facilities for the consultation of documents. His historical writing is characteristic of the interest of the Iberian peoples, inspired by the Renaissance, in the investigation of their ancient history and achievements. Morales' principal work is the continuation of Florián de Ocampo's *Corónica general de España*; like Ocampo, he identified Spanish antiquity with Roman history, and beginning with a discussion of the social conditions under the republic he carried the account from the midst of the Punic Wars to the termination of the Leonese monarchy with Bermudo III. He lacked feeling, animation and artistic sense, but he was more critical than Ocampo both in the choice of sources and the appreciation of events. His chief claim to originality lies in the great importance he assigned to such non-literary sources as geography, archaeology, epigraphy and numismatics. While he gave considerable attention to ecclesiastical history and hagiography in the chronicle, Morales displayed to a marked extent the awakening interest of scholars in facts of everyday life which appeared in his period; illustrative of this attitude are his panegyrics on the Castilian language.

FIDELINO DE FIGUEIREDO

Works: Ocampo's *Corónica general de España*, continued by A. Morales, 7 vols. (Alcalá 1574–86; new ed., 10 vols., Madrid 1791–92, of which vols. iii–x are by Morales); "Discurso sobre la lengua castellana" in *Las obras del maestro Fernan Perez de Oliva*, ed. by A. Morales (Madrid 1586); *Apologia en defensa de los Anales de Gerónimo de Zurita* (Saragossa 1610); *Viaje de Ambrosio de Morales* (written 1573; ed. with notes and biography by Henrique Florez, Madrid 1765).

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MORALS. Until rather recent times morals were not distinguished from manners. Together with ceremonials they were techniques of behavior believed to be efficacious in securing goods and averting evils. They were judged by identical standards as right or wrong. In the course of time, manners came to be identified with techniques recognized to be manifold, changeful and contingent; morals with a system presumed to be single, unchanging and necessary. They were called and they still are in certain quarters not morals but *morality* and were ascribed to universal principles of right conduct endemic to mankind.

The pluralization of morality into morals follows upon the recognition that morality also consists of manifold, changeful and contingent techniques of conduct. Considered thus morals so largely overlap manners, folkways, mores, law, ethics and public opinion that only convention or fiat decides where these others leave off and morals begin. Contemporary opinion tends to confirm William Graham Sumner in distinguishing folkways and customs as group habits; law as such habits found or ordained, but enforced by police power; ethics as a corpus of rules derived by reflection upon morals; and morals themselves as "the sum of taboos and prescriptions in the folkways by which right conduct is defined."

"Right" is the differentia of the moral. A term of selection, it designates group approval as against group disapproval and implies instrumentalities to enforce the approved and to punish the disapproved. The character of the coercive agency decides the classification of the conduct involved. If that be political, the "right" thing is a matter of law; if ecclesiastical, a matter of religion; if public opinion, a matter of use and wont, convention or fashion. Occasionally the "right" thing is the same for all institutions. Oftener there are conflicts; distinctions are at work. People are described as morally bound and legally free, morally guiltless and legally responsible, moral victors and actual losers, and vice versa. Very widely morals are identified with sexual habits, "moral" and "immoral" being so much identified with sex conduct that bad citizens and unscrupulous business men are condoned as "good husbands and fathers."

So great is the diversity of patterns and principles of conduct that actually comes under the scope of morals that it is impossible to analyze the subject matter scientifically on the basis of a single rule or formula. Even the biological "instinct of self-preservation" fails to embrace all morals, since there are societies—as in China or Japan—which require suicide in certain contingencies; and all societies require murder and

self-immolation in war times. Nor is the survival of the community as distinguished from the survival of its members an adequate criterion, since—as always under the Buddhist or Christian monastic rule and occasionally in the moral economy of every society—ways of life are required which undermine the health and stunt the growth of the community. "Right" does not apply to the function of conduct but to its form. Regarded from the standpoint of vital function morals are secondary and tertiary characters, related to primary ones, often as certain phases of instinctive behavior in insects are related to insect survival or as the plumage of peacocks, pheasants and birds of paradise is to the actual conditions of the birds' lives. They are cancer-like excesses of vitality, stereotyped, and not only add nothing to vital function but often actually conflict with and nullify survival. The rules of kinship and marriage among primitives and Catholics, the rules of property among moderns, express formations of this kind. Together with other moral forms they present themselves as divergent and stereotyped patternings of activity starting from one or more of the primary drives of the psychophysical organism.

Explanation of morals in terms of use is necessarily forced and artificial. They appear to be rather configurations built up as reveries and dreams are built up by a sort of self-pyramiding upon a dynamic affectional ground and a dynamic situational content which carry them as woman's body carries stays and bustles and ruffs or a soldier's body carries a uniform. As Huxley observed: "The notion that the doctrine of evolution could furnish a foundation for morals, seems an illusion." Whatever accidental experience morals begin in, their growth and survival are not due to natural selection and superior fitness.

In morals function follows form rather than form function. To the determinants of both which men share with animals must be added memory, imagination and speech. "Right" conduct, the correct manner of obtaining good and avoiding evil, is postulated upon an imaginary, unseen world of gods and ghosts and demons and upon a living past as well as upon the social and natural environment. "The necessities of life," which are at the core of all goods and evils, are believed contingent on all three realms. Necessities are not such through being indispensable to survival; for example, air is, but even in these days of elaborate ventilation systems air, unlike people and property, is a good whose winning has not yet brought forth moral laws.

A "necessity" enters morals when it is consciously desired or rejected, pursued or avoided by a group. Foodstuffs and sex objects, clothing, shelter, defense against diseases and enemies, are such necessities. Consider primitive customs and codes: Australian tradition, Aryan sutras, Israelitish commandments, are alike meticulous concerning what to eat and what not to eat, how to secure it and prepare it, in what company to eat and so on. Cannibalism, which is a horror to us, has been a felt vital necessity to more than one ancient people, since it is based on the belief that men are what they eat and that to eat the strong, the great, the wise, is to become great, strong and wise. The belief persists, passing, with the growth of communities in well being and security, through a series of mutations. First, cannibalism as the nourishing of men upon human flesh is replaced by human sacrifice, which is nourishing ghosts and gods on human flesh. Human sacrifice was indeed so common in antiquity that it is a boast of Aristotle that the Greeks no longer practised it. The transformation is completed where the material sacrifice becomes imaginative and ideational; instead of men eating men or gods eating men, men eat gods. The Eucharist is the current descendant in the direct line of the primitive cannibalism. The prescriptive dietary systems of Todas, Jews, Brahmans, Mohammedans, with their clean and unclean foods, exemplify the more positive elaboration of the same process in selecting and defining "right." In free society the necessity has lapsed and diet has become a matter of manners.

Codes deal similarly with the biological crises and conditions of the personal life—birth, puberty, menstruation, cohabitation, marriage and divorce, association with others. They regulate contact and communication between the sexes, between the generations, between the castes, between the outsiders and the insiders.

Dress and decoration, themselves derivatives of the nutrition and sex complexes, also fall under rule: codes prescribe how hair shall be worn; how a person shall be marked and dressed for hunting, fighting, courting, marrying, burying and for contact with ghosts and gods. Except among the military and ecclesiastics such rules have dropped to the level of manners. But practically until the industrial revolution they were momentous moral principles.

Sex rules exhibit analogous conditions and processes. In many quarters morality has become synonymous with a certain prescriptive form of sexual life. Now psychoanalysis has called attention to persistent incestuous trends in family life in the form of the "Oedipus complex." Incestuous practises are still much commoner in Europe and America than many like to recognize, but they are condemned with greater horror than homosexuality, sadism or masochism. Among native tribes in South America and Australia, however, exogamy may be prescriptive, yet incestuous and promiscuous relations are commonplace. Fear of menstrual blood is expressed by tabus not only against cohabitation but against contact with menstruating women. Often a whole sexual economy is postulated upon a presumable danger to the male from the blood of the female of the species.

Consider, again, the status of woman. Anthropologists point to existing matriarchal orders and to the vestigial matriarchies of all societies. For some reason, perhaps the discovery of the role of the father in procreation joined with the feeling of security accompanying the settled routine of an agricultural economy, women and children became valuable farming tools. Instead of being individuals within the undifferentiated community of the tribe they became personal to the adult male. Women thus took on the character of property: sold by the father, bought by the husband, with their functions standardized and limited. As civilizations grew more complex, women ceased to be valued for their skill. Their untouched femininity alone counted. How and when the woman's virginity becomes an asset to the man who marries her and consequently important to her cannot be told. The organic connection between sexuality and religion indicates that the fertility of women and the fertility of earth and beasts were held bound together. Sometimes women became priestesses of the life renewing divinity, with the duty to receive the seed of every man who came to the temple to offer. At other times they became guardians and conservators of the sacred, creative, life giving fire of the hearth and hence might know no man whatsoever. Holy women like the vestal virgins are of a later growth than holy women like the temple prostitutes, the priestesses of Diana, or the Great Mother and the like. The institution of the Vestals registers the fact of women having become property. *Virgo intacta* is a proprietor's conception. In the course of time virginity becomes a rule of "right" conduct for all women of the western world. Motherhood indeed is absorbed in virginity, and the maiden who became the mother of antique religion is transformed into the mother who stayed maiden of the Christian cult: Mary, Mother of God and Virgin still.

Considering non-human property, the growth, elaboration of, and struggles to abolish property distinctions seem to provide one of the most interesting phases of moral history. Property relations are preeminently the subjects of the most heated moral controversies. Possessions are with difficulty distinguished from personality. Amid the simple native communities of Australia and the Americas the sense of personality extends hardly beyond the skin. Husbandry or hunting may be practised alone or with companions; production of any sort may be private or cooperative; but consumption is always communal. Hunter and husbandman share catch and crop with their fellows. Their tools are personal when employed but communal *in potentia*. The "Indian giver" is one who understands ownership as use; the unused object may be asked back if need arises. In such circumstances private property could hardly be a focus of moral regulation. It enters morals where personality has begun to extend beyond a man's skin, where such extension has become static rather than functional. It is in evidence in agricultural economies where the father figures as the master of the family. First, it seems limited to the winnings of his personal prowess—his women, his children, the immediate work of his hands. Land long remains communal. Its individualization has been intermittent and for the most part incomplete. "Public" has been made "private" and private public, with a marked tendency to recognize the "right" of eminent domain.

One group's virtue, to sum up, can be another group's sin. Obeying the Ten Commandments or following the gospel of Christ or of Marx may be beatitude or turpitude. Rules of right conduct begin in accident and obtain contingently. A perception with little or no objective relation to the vital economy may have a profound emotional one, stirring personality to its depths, so that nuclear drives are reanimated and the perception becomes a focus of simultaneous appetitions and evasions. Or, conversely, a perception inwardly determined by hunger contractions, glandular pressure, circulatory conditions, their ideomotor correlates and the like operates like a magnetic pole whose lines of

force attract some and repel other objects, distributing the former in a definite pattern around their cores. Morals present a fair analogy to such processes, whether they are responses to external stimulation or to action initiated within. Chance behavior forms in their beginnings, emotion fixes them in memory, imposes their repetition and verbalization. The latter refine and polish the original action pattern; the action pattern reawakens the emotion in which it was set off. The initiative perception behind moral responses disappears from remembrance. The responses survive—the action compulsive, the feeling that of conformation to force.

Stated in words, the action is now a "moral law." The generations transmit it, the older infecting the younger with the feeling which the formula sustains. Since the originative force is forgotten, another origin is automatically attributed. And all attributions seem to be summed up in the formula: "It was Father's way"—*mos majorum*. Where societies are complexes of lesser groups, the importance of the fathers seems neutralized. *Mos majorum* ceases to be their way: it becomes a way which an original father of fathers, a king, a god, reveals as his will for man. *Mos majorum* bifurcates into custom and code. The moral code is the will of God. It embodies sanctions—promises of reward and threats of punishment—since its ordinances prescribe behavior forms constantly subject to variation and lapse. Where the code, first imposed and then accepted, is acknowledged by the general sentiment it becomes a community's ideal and expectation, the "spirit" of the people or the times, glorified as "the moral law." In such situations, the consequences of conformity are indifferent. Virtue or morality consists in this conformity; right conduct is not commanded because it is good, it is good because it is commanded. The commandments are made known to a chosen one, an actual or legendary lawgiver—Numa, Moses, Lycurgus, Buddha, Zoroaster, Jesus—who becomes the great hero of the community acknowledging his law. Through him the Lord reveals His will regarding men. The awareness of this law, whether it be unwritten *mos majorum* or written codes as with the Parsis, the Spartans, the Jews, the Christians or the Buddhists becomes the determining component of conscience. The "voice" or the "dictates" of conscience consist in the conflict between the pull or push of a prescription or a tabu and some contrary impulse.

The code is transmitted chiefly by means of education. Among primitive peoples this is mainly a brief painful indoctrination in the tribal law. More advanced societies also presume that the code must be learned. In none do its obligations bind the admittedly uninstructed. Thus children, at least among savages, are left pretty much alone until their initiation at puberty. Then the code becomes coercive. Moreover, within the general tribal code special sex codes function, so that males and females live under different rules.

The history of morals reveals, however, much variation. Among Christians, especially after the Protestant Reformation, children were indoctrinated at a very early age and the code bound them only a little more strictly after baptism or confirmation than before. The Athenian rule for women contrasted sharply with the Spartan; republican Rome made other requirements than did the Rome of imperial times.

In all societies birth, wealth and position modify the obligatoriness of the code. Thieves have their honor; and presumably *noblesse* obliges only the nobility. Actually, however, *noblesse* carried privileges, not obligations. Thus, while gambling debts were considered "debts of honor" which must be paid, payment for necessaries could be deferred with impunity until death; the nobleman hunted, the commoner poached; the nobleman "drank like a gentleman," the commoner "got drunk." Pecuniary times have invented and the moral rule enforces the standards which make debt and gambling alike dishonorable.

Sexual morality provides similar distinctions. The code for females is stricter than the code for males. The woman known to live like a man is déclassé; while a man who consorts with prostitutes is accepted everywhere.

Race is a factor. American whites do not expect Negroes to live by their rules of sex or property. White men may consort with Negro females all their lives; a Negro male cohabiting with a white female may be either burned to death to vindicate "the honor of Southern womanhood" or judicially executed with all the pomp and circumstance of legal ritual.

Sometimes religion does not strengthen but relaxes a community's code, as among the Brahmans, where the *ngana yogin* claims freedom from all the rules of caste. Class, profession or vocation relaxes codes. Thus the conduct of artists is allowed a certain looseness and flexibility; and women artists, especially actresses, are conventional objects of pursuit by libidinous

males who can afford to practise the art of love for its own sake. Again "business is business" and has its own morals, which the schools endeavor to offset with "business ethics."

In fact the rule of any code whatever is at no time complete or unchallenged. Variations are sometimes allowed, sometimes assert themselves, sometimes operate in secret but always exist. They are unstable and shifting configurations of many groups, each with its characteristic behavior pattern, which sometimes nullifies and always diverges from the code of the dominant group.

The latter, enforced against continual opposition and variation, is the special charge of the ruling class. The code indeed serves as its major implement of domination among the Australians, where the magisterial old men do what they please while others are punished for breaking the rule. In the nature of things it rarely happens that the guardians of any law do not soon feel themselves somehow above the law. This is why corruption comes to be the traditional attribute of the military, the politicians, the police and the clergy. To every wielder of "lawful" power accrues that "divinity" which "doth hedge a king," which raises him above the law. Since a way of life can be actual only as the habits of the people whose way it is, the preoccupation of those who enforce a way must necessarily center in the habits of enforcement. Codes seem powerful only with the strength of those habits of enforcement and operative only by their action. The enforcers of a code soon acquire a realistic attitude toward the nature, origins and functions of codes. They do not obey what they enforce. Was not the secular spirit first manifest among ecclesiastics themselves?

But whatever the ruling class, the moral code is enforced and invoked in its behalf. Invocation usually becomes prominent when opposing groups with power challenge the dominant mores and the ruling class feels insecure. At such times monitions are heard about the decay of morality and the decadence of civilization.

Opposition usually begins as protest and grows into power. It defines and confirms itself by a contrasting doctrine and discipline of life. Historically all oppositions start with a morality which seems ascetic beside the established ways. Philosophic sects like the Epicureans and stoics, theocratic ones like the Jewish Pharisees, the first Christians in Palestine and elsewhere, oppose a certain strictness of conscience and conduct to the general compromise and tolerance of the ruling classes of the time. Primitive Christianity was communistic and monastic; Lollards, Cathari, Calvinists, enacted analogous simplifications and prohibitions. The contemporary parallel is the Communists of Russia with their hard discipline, egalitarian poverty and religious adherence to the Communist code. These endure so long as the new code is not secure. The history of every endeavor to set up new morals shows that relaxation follows security. Among the keepers of the code *askesis* expands into a hedonic practise, but upon their subjects it is imposed as heretofore. So in the United States "Americanization" uses the "doctrine of the Declaration of Independence" to impose upon its initiates acquiescence in the supremacy of the ruling classes and their ways. The Russians' "dictatorship of the proletariat" and "proletarianization" are simply candid and unhypocritical applications of the same practise in the Russian scene.

Every moral code depends upon coercion, often unconsciously. On infants and children coercion works by emotional and verbal contamination from adults, who impart their wishes in a moralizing setting of rules variously rationalized. The emotions soon become so overladen with habitual rules that the rules themselves seem intuitive and inevitable, when they are only familiar. Where this has ceased to be the case, as in the modern world, or in Periclean Athens, the codes have either been confronted by alternatives or shaken in authority through catastrophe or experience. Thereupon they receive protective elaboration and are reenforced with secondary agencies created *ad hoc*. Such elaborations and agencies are the courses in "character building" now in vogue in American schools, the rise of the discipline called "social ethics" and the curious "citizenship" courses. Others are the extragovernmental censors: "patriotic" societies, the Ku Klux Klans, and the new creations of the churches. All endeavor to validate codes recognized though not admitted to be shaky.

But the most pervasive sanction for any complex of morals, whether or not codified, is religion. Religion is nearer the primary pattern of the social complex than any other institution. Its sanctions, involving supernatural rewards and punishments, enter early into the consciousness of the young. In the child's experience the God invoked to enforce right conduct consists of the word "God" and the feeling and attitude of the person speaking. For the most part God,

in early life, had been the verbal associate of actually experienced monition, anxiety, repression, hurt or pain. By its use the code is readily made momentous. Orthodox cults thus continue to invest with moral sanctions much that the secular world has reduced to manners. Female fashions, drinking, dancing, gambling, diet, are frequent topics of warning for professional guardsmen of the code. The same practise keeps atheism reprehensible and obscene and sustains the widespread delusion that disbelieving in God and possessing a criminal disposition are synonymous, that without religious sanctions morals must decay.

Enforcement and support of the sanctions of morals call for all the engines of control employed by any power desiring to maintain doctrines favorable to itself. The lapse of such doctrines follows either the rise of more powerful countersanctions or new conditions of existence which alter morals and ultimately create new rationalizations. Thus the mediaevals regarded usury as a more or less immoral practise fit only for Jews and infidels. But when an improvement in mining increased the production of precious metals, the money economy which it made possible moralized usury. Luther allowed, and Calvin, Puritanism's prime lawgiver, wrote a treatise favoring, usury. Here that complex of practises usually described as the morals of early capitalism employed Reformation theology to rationalize and to justify behavior contrary to the traditional code, which was soon made to conform to the strength that its supporters could not overthrow. Practise came first; its conscious formulation as a permitted, even a noble, action followed. The new code was at once the expression of the power and a defiance of the enemies of those who practised it.

Labor saving machinery disturbed the habit patterns of the community in another way. As machinery spread, population took an unprecedented spurt; and a worker counted inversely to the number of his competitors. This led to "labor troubles." These Wesley tried to assuage by a "method" revitalizing the old code of submission and obedience to authority. But he could do so only by altering fundamentally the structure of the ecclesiastical establishment itself, allowing to laymen forbidden ecclesiastical privileges and powers, thus distracting the attention of early British industrial workers from their hard lot. The cause of the evil, however, nullified the cure, and the Methodists are a negligible sect in England. In the setting of the American wilderness, however, Methodism served to preserve the traditional code, combining considerable liberty with authority, and Methodists are important in the United States.

Since Wesley inventions have multiplied geometrically, and contacts of diverse moralities in proportion. Every new major invention adds to the environment a new control of behavior, distorting, overlaying and otherwise transforming habits. Every new contact invites the odious comparison. Morals appear so varied and contrary that students freed from the traditional prejudices see morals as habit structures whose value for living is, to say the least, ambiguous. Since these structures frequently interfere with rather than facilitate function morals are seen as growths, like languages; the patterns of neither have any necessary connections with the meanings they communicate. Functional obstruction is attributed particularly to morals of sex and property, and the tendency of theorists is to strip entirely away their mass of secondary and tertiary habit growths. The tendency serves to verbalize the actual attrition and replacement of morals which industry and science are causing. Thus, the sex standards of "purity" and "virginity" for women are lapsing; "marriage" has ceased to be the finality it was. Legal changes are registering the trend toward the equalization of the sexes. The old code degrading women is invoked less and less.

Property habits evince analogous changes. Here the content and character of ownership are so radically altered by the financial and industrial system that the public limitation upon "property rights" grows by leaps and bounds. This applies also to the rights of parents over children. The "sanctity of the family" is cried up the more as the community increasingly takes on parental obligations.

Earthquakes, floods, epidemics, famines, depressions, wars and revolutions relax morals generally and thus set up counter-affirmations of the code. The helpless counter to revolution is canonization of the overthrown code: Russian émigrés are said to observe as a ritual the czarist ways of life, economically futile and no longer valuable as conspicuous consumption. Makers of basic revolutions, such as the Russian or French, may endeavor to ordain a new code. Such a code conflicts directly with both the mores of the residual population and the personal habits of its individual members. The effort to impose it leads simply to withdrawal, psychological and physical. Neither appeals to

the hope of security and the fear of starvation nor to experimental demonstration accomplish much. The emotions mostly energize the old habits; St. Tryphon remains the insecticide preferred over more material poisons. Persistent training and indoctrination only ruffle the surface. While no emergency disrupts the basic life patterns, while primary needs are gratifiable at the level of subsistence, adult morals hardly change. Ten years of Russian effort to establish "scientific, rationalistic morality" leaves the older patterns and sanctions very little altered and has set up new ones equally irrational. Only fundamental innovations in the material environment, new people, new tools and new stuffs generate new habits. Lacking these, even habits shattered by catastrophe come back. At most the innovative codes serve the secure as escapes or entertainment. Both Rousseauism and science so served the eighteenth century aristocrats. By itself alone a new code changes manners, not morals. It sets up a fashion, not a folkway.

Ethics, i.e. philosophies or psychologies of conduct, also define themselves with reference to the situation in which they arise. As produced, a system of ethics utters the temperament of its inventor, expressing his personal reaction to his world. This he makes public. If it becomes vogue it does so for two reasons. The first is the congruity of the author's personal hopes and resentments with the mood of his time. The second is the persuasive skill with which he rationalizes the mood, endowing its loves and hates with an ineffable ground in the nature of things. So Oswald Spengler lays out the cosmic ground for German discontents. So Sigmund Freud rationalizes the changing sex relations due to science and industry. So Karl Marx grounds in an invincible dialectic necessity the aspiration of the disinherited of industrial societies for the fulness of life. So Henri Bergson nollifies the fear of science and discontent with ndustry which are evinced by partisans of lapsng morals and their sanctions. The systems consist of logical elaborations of special items selected from the aggregate of morals. This aggregate has no unity and no structure. It is a ungle of secondary and tertiary growths of habits, most of which an engineering comprehension of the dynamics of human and cultural survival would strip away and all of which it would rearrange.

Unhappily moralists are persons who take an engineering view of other men's ways of life. To a man his ways are his life: he clings to and endeavors to preserve them regardless of the cost. A "scientific, rationalistic morality" is thus a contradiction in terms. Morals in their roots, their growth and their sanctions are as irrational as the lives they inform; they are to be rationalized but hardly rendered reasonable.

HORACE M. KALLEN

See: ETHICS; CUSTOM; FOLKWAYS; CONVENTIONS, SOCIAL; ETIQUETTE; LAW; CONDUCT; CONTROL, SOCIAL; TABU; SANCTION; COERCION; CONFORMITY; PUBLIC OPINION; RELIGION; EDUCATION; HONOR; CHANGE, SOCIAL; EVOLUTION, SOCIAL; INNOVATION; CONSERVATISM.

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MORATORIUM. The desire to protect individuals or communities from the consequences of default or of the collapse of the general credit structure has resulted in the invention of various

devices to postpone the fulfilment of obligations. Most important of these devices is the moratorium, which is a postponement of payment decreed by the state through the medium of the courts or legislation and differing from postponement based on voluntary agreement, such as composition of creditors. Moratoria to relieve individual debtors are called special moratoria—such were the German *Quinquennellen*. A general moratorium is instituted either to relieve particular groups of creditors who have been placed in unfavorable situations, as in the case of the moratorium decreed by St. Louis in favor of the crusaders or of the moratoria enacted during the World War by various American states in favor of persons in military service; or it may be in favor of all debtors in the community in order to preserve the financial structure in times of great stress, as, for example, the English and French moratory legislation during the World War.

Considerable variation exists concerning the types of obligations affected, bills of exchange, mortgages and debts in general, and there is even greater variation in the machinery for enforcing postponement. Certain laws have affected the substance of the obligation, such as those postponing the maturity of a bill of exchange; some have forbidden the institution of suit; others have suspended some procedural incident, such as service of process or execution of judgment; and still others have gone so far as to close the courts during the moratory period. While the typical moratorium is decreed by statute, a peculiar form of judicial moratorium has been developed in the United States by the use of the equity receivership. Both statutory and judicial moratoria have grave defects with regard to their effect on public confidence and because of the difficulty of securing speedy action during a crisis. Substantially similar results have often been achieved by private or semi-public bodies. Closing of stock exchanges for limited periods, suspension of check clearances by clearing houses, agreements among groups of banks not to call loans or to foreclose mortgages, have been utilized. The "standstill agreements" among the foreign creditors of German commercial houses which were concluded during the credit crisis of 1931 constitute a striking international application of such action.

Although in the ancient and mediaeval periods the absence of a complicated credit economy made the moratorium a relatively unimportant device, there is evidence of its use from very early times. A temporary suspension of private claims in Greece during a war is touched upon in one of the speeches of Demosthenes, and some mention of moratoria is to be found in early Roman sources. The first general moratorium appears to have been that enacted by Justinian in 555 A.D. following the invasion of Italy by the Franks ("Lex quae data est pro debitoribus in Italia et Sicilia" in *Novellae*, Appendix VIII). The code of Justinian provided for the granting of a special five-year moratorium by imperial rescript where a certain number of creditors consented. A misinterpretation of this provision led to the practise during the Middle Ages whereby sovereigns granted special moratoria without the consent of creditors. In France such moratoria were granted in favor of persons indebted to Jews and in favor of crusaders. The practise was abolished by the Ordinances of January, 1560. By the *Code civil* (art. 1244) the courts were permitted to grant individual debtors limited delays for payment. In the German states the granting of moratoria, called "iron letters" or *Quinquennellen*, by sovereigns to particular debtors continued unabated until the end of the eighteenth century. The scandals aroused by the purchase of such respites of payment are mirrored in the proverb *Quinquennellen kommen aus den Höllen*. These special moratoria of the Middle Ages were motivated by private, political or religious purposes rather than by economic considerations and they tended to disrupt rather than to improve business conditions. In the city republics of Italy and Germany the growth of trade led to the use of a moratory device providing temporary delay for hard pressed debtors.

The complex economic system of the nineteenth century could not tolerate the granting of special moratoria by the executive. The practise has become extinct although attenuated forms of judicial special moratoria still continue to exist in the French *Code civil* and in the American equity receivership. On the other hand, the general moratorium has been found to be indispensable during times of crisis. Much moratory legislation was enacted during the Thirty Years' War. Moratoria were decreed for the Holy Roman Empire after the War of the Spanish Succession, in Prussia after the Peace of Tilsit in 1807 and in France in 1870 for bills of exchange. In England they were not used between the period of the Napoleonic wars and 1914. The most widespread resort to this device occurred during the World War, when mora-

toria were decreed in almost all belligerent countries and in many neutral countries both for those in military service and for debtors in general.

It will be seen that general moratoria have been ordered usually in war time. The economic depression which began in 1929 marked a revival of the practise in times of peace. During this period moratoria appeared in various new guises. Thus in Germany during the financial panic in the summer of 1931 limitations were placed on withdrawal of bank deposits; there was a national bank holiday in the United States in 1933. Restriction on foreign exchange or on the export of currency in Germany, Austria, Rumania, Greece and other countries resulted in what were practically moratoria on foreign payments. The collapse of the Kreuger interests in 1932 led to a moratorium in Sweden. Voluntary suspensions of demand for payment by groups of creditors which had the effect of moratoria were common and ranged from the standstill agreements of the foreign creditors of Germany to agreements among groups of American banks and insurance companies not to foreclose farm mortgages. Most striking was the one-year moratorium on intergovernmental debts and reparations adopted at the suggestion of President Hoover in 1931.

In the United States moratory legislation presents a special problem. The Constitution of the United States (art. 1, sect. 10) provides that no state shall pass a law impairing the obligations of contract. This has not prevented the passage of numerous state moratorium acts, but the question of their constitutionality is shrouded in a fog of judicial decisions. Some state courts have attempted to distinguish between the obligation of the contract and the remedy granted by the law. The latter, it has been said, may be postponed or burdened with conditions. Although the United States Supreme Court has held that the remedy is an integral part of the obligation, not every impairment of the remedy can be considered an impairment of the obligation. A review of state moratory legislation indicates the difficulties of the question of constitutionality. Statutes suspending execution or staying proceedings in favor of needy debtors even for a definite period, such as those of Georgia, Virginia, North Carolina and Pennsylvania, have always been held unconstitutional [Aycock *et al. v.* Martin *et al.*, 37 Ga. 124 (1867); Taylor *v.* Stearns *et al.*, 18 Gratt. (Va.) 244 (1868); Jacobs *v.* Smallwood, 63 N. C. 112 (1869); Billmeyer *v.* Evans & Rodenbaugh, 40 Pa. St. 324 (1861)]. Statutes suspending execution or staying proceedings in favor of persons in military service, such as those of Missouri in 1847, Pennsylvania in 1861 and Iowa in 1862, have been held constitutional, in the early cases on the ground that they merely affected the remedy [Edmonson *v.* Ferguson, 11 Mo. 344 (1848); Breitenbach *v.* Bush, 44 Pa. St. 313 (1863); McCormick *v.* Rusch, 15 Ia. 127 (1863)] and in the cases in regard to moratorium acts passed during the World War on the ground that the legislation was a valid exercise of war powers [Studt *v.* Trueblood, 190 Ia. 1225 (1921); Strand *v.* Larson, 45 N. D. 7 (1920)]. Some state courts (Breitenbach *v.* Bush) have held these moratoria applying to persons in military service to be valid only where the stay was for a definite time; others, like North Dakota in 1918 (Strand *v.* Larson) and Iowa in 1919 (Studt *v.* Trueblood), have held valid statutes suspending proceedings "for the duration of military service." Two important cases indicate that the indefiniteness of a moratorium renders it invalid: a Virginia law staying proceedings against all debtors for duration of war was held invalid by the United States Supreme Court [Daniels *v.* Tearney, 102 U. S. 415 (1880)] and a New York law staying proceedings on certain insurance contracts until a Russian government should be recognized was held invalid by the New York Court of Appeals [Sliosberg *v.* New York Life Insurance Co., 244 N. Y. 482 (1927)]. In contrast the New York emergency rent laws (1920 and 1922) were held valid on the ground of the existence of an emergency. In general it appears that a moratorium act based upon an emergency, limited to a definite time and affecting in terms only the remedy and not the obligation, would be upheld as constitutional.

In 1864 federal moratory legislation was enacted extending the period during which actions already accrued might be initiated. The Soldiers' and Sailors' Civil Relief Act of 1918 was intended to provide extensive protection for those in military service. Its method was mainly to suspend proceedings in the cases involving the rights of sailors and soldiers during their absence. In order to avoid the inflexibility of the state laws much was left to the discretion of the courts. The act, which definitely interfered with contractual obligations as well as with remedies, was considered a valid exercise of the war powers of Congress.

Problems have arisen in connection with the

recognition of moratory legislation relating to bills of exchange by the courts of other states. The English courts recognized the validity of the French moratory legislation of 1870-71 which applied to bills of exchange payable in France [Rouquette *v.* Overmann and Schou, L. R. 10 Q. B. 525 (1875)]. While there is much conflict, the weight of opinion tends in the direction of recognizing the moratory legislation of the place where an instrument is payable, particularly when it merely postpones the date of protest, but refuses to permit recognition of legislation which purports to affect the maturity of instruments payable in other countries.

Although the moratorium in the nature of special indulgences to individuals has practically disappeared, the general moratorium has displayed decided powers of survival and growth. A complex economic system carrying a huge load of debt might well collapse under a sudden blow unless some such instrument for permitting a breathing spell were utilized. So far as individuals are concerned, the fact that most persons are both debtors and creditors tends to balance the advantages and disadvantages of laws delaying payment. People and businesses suffer from them relatively to the extent that they are preponderantly creditors, not only because they do not receive payment when due but because the moratorium permits insolvent enterprises to continue and as a result frequently places the creditors in a worse position than if immediate bankruptcy had taken place. The charging of interest during the period of the moratorium and the increased flexibility of modern moratory legislation tend, however, to alleviate gross injustices, and it is doubtful whether creditors would be better off if no moratorium were declared and a general economic debacle occurred. The extensive use of moratoria during the depression which set in in 1929 indicates that unless the economic system reaches a much greater degree of stability than it now possesses, resort to them will continue to be necessary in times of economic stress.

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See: DEBT; CREDIT; NEGOTIABLE INSTRUMENTS; CRISES; BUSINESS CYCLES; WAR ECONOMICS; CLEARING HOUSES; STOCK EXCHANGE; REPARATIONS; LOANS, INTERGOVERNMENTAL.

Consult: Mayer, Adolf, "Studien über das Moratorium des Altertums und Mittelalters im Rahmen der gleichzeitigen Kreditwirtschaft" in *Jahrbücher für Nationalökonomie und Statistik*, vol. cviii (1917) 417–77, and "Zur Geschichte und Theorie des Moratoriums" in *Schmollers Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft im Deutschen Reiche*, vol. xxxix (1915) 1789–1836; Kôersner, A., and Rabenius, N., *Om moratorium*, Svenska Bankföreningen, Stockholm, Skrifter no. 33 (Stockholm 1923); Clements, A. F., and Waterson, H. G., *Commercial Law in War Time* (London 1914) ch. iii; *The Postponement of Payments Act, 1914, and the Courts (Emergency Powers) Act, 1914*, ed. by A. D. Bolton (3rd ed. London 1914); *The Courts (Emergency Powers) Acts 1914 to 1917*, ed. by A. D. Bolton (4th ed. London 1918); Hanna, H., *The War and Suspension of Legal Remedies* (Dublin 1914); Bendix, L., *Der gesetzliche Zahlungsaufschub im Kriege* (Berlin 1914); Jaffa, S., *Der Zahlungsaufschub und die Konkursverhütung während des Krieges* (Berlin 1914); Jacobi, E., *Rechtliche Fürsorge für Kriegsteilnehmer* (Leipsic 1919); Ropers, L., *Le règlement des dettes moratoriées* (Paris 1921); Kettleborough, C., "Moratory and Stay Laws" in *American Political Science Review*, vol. xii (1918) 458–61; Ferry, M., Rosenbaum, S., and Wigmore, J. H., "The Soldiers' and Sailors' Civil Rights Bill" in *Illinois Law Review*, vol. xii (1918) 449–81; Sholl, R. R., *The Moratorium Act Handbook* (Melbourne 1928); "The German Standstill Agreement" in *Economist*, vol. cxiii (1931) 513, 804–05, 1108–09, and vol. cxiv (1932) 224–28; Ramel, E., *Le moratorium de la lettre de change et son traitement en droit international privé* (Uppsala 1925); Lorenzen, E. G., "Moratory Legislation Relating to Bills and Notes and the Conflict of Laws" in *Yale Law Journal*, vol. xxviii (1918–19) 324–86, with bibliography on works on moratory legislation and the conflict of laws; Great Britain, Foreign Office, *Report of International Committee of Experts respecting Suspension of Certain Inter-governmental Debts*, Cmd. 3947 (1931); International Symposium, "The Hoover Plan," and Ormesson, Wladimir d', "After the Moratorium" in *Living Age*, vol. cccxl (1931) 530–49.