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THE DEVELOPMENT
OF
MODERN WORLD TRADE

The Century Studies in Economics

WILLIAM H. KIEKHOFFER, EDITOR

THE DEVELOPMENT OF MODERN WORLD TRADE

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This Book is Dedicated to My Friend

CASPER S. YOST, LL.D.,

EDITOR OF THE ST. LOUIS GLOBE DEMOCRAT,

As a Tribute of Esteem

PREFACE

The character of international trade has changed in notable respects since 1870. The expansion since that date has been significant not only because of greater industrialization in certain parts of the world but also because of the opening of new areas for the activities of industry and commerce and for the development of more intricate relations in all economic fields.

In a very real sense, the years from the first industrial revolution to about 1870 covered a period of preparation. This was an era of the introduction of many basic inventions, of ideas suggestive of new lines of advance, and of rapid changes in external forms of business both in domestic economic arrangements and in foreign trade. It was also a period characterized by continuous consolidation of previous gains, and, of equal significance, by the spread of the influence of the new systems to other parts of the world. Not that the penetration was complete. Even to-day, many millions of people live and work by methods which do not differ in marked respects from those of their ancestors many generations ago. But, in a brief period, other millions have left the old order behind and have become participants in what we choose to call "economic progress." The opening of China and Japan for world trade, the settlement of lands in the United States west of the Mississippi river, notably after 1860, the establishment of stable political conditions in much of Latin America, particularly since 1870 and the opening of a considerable portion of Africa for industry and trade—conditions which were necessary for the upbuilding of an economic order—are features which belong peculiarly to this late period.

Although various lines of industrial activity, both in the United States and in a few of the countries of Europe, had reached large proportions by 1870, the sixty years which followed this date witnessed a five-fold increase in deep-sea tonnage, in world-railway mileage, and in cotton-production; a six-fold expansion in the value of international commerce and in the production of pig iron; and approximately a seven-fold increase in world production of coal.

In all these respects, the conditions of international commerce in

1930 were vastly different from those of 1870. But these are more or less superficial aspects. They represent a concluding chapter of achievements instead of ways and means for bringing these ends to a consummation. To the student of international commerce the ways and means are important because they include technical developments, policies, intricate relations, and other lines of conduct by which final accomplishments are attained. Thus the devious routes to achievement are just as much a part of our study as the goals to which they lead.

By the nature of the case, it is not possible to separate industrial from commercial progress. The interaction between changes in commerce and industry is continuous. Cause and effect are mingled in such a manner that it is usually impossible to locate one or the other and to say: "This is the effective cause; these are the results." The growth of commerce is both cause and effect. On the one hand, commercial expansion contributed enormously to the development of manufacturing, mining, forestry, and farming. But, on the other hand, industrial progress made commercial expansion both possible and necessary. The contributions of commerce to economic progress have been as much in the development of its facilities as in its actual technique of buying and selling. These facilities include provisions both for long and for short term credit, transportation of various kinds, storage, and insurance, to name only the most important of these aids. Because of this interrelation I have found it necessary to study—sometimes at rather great length—matters which seem to fall more largely in the field of industry.

The material contained in this volume is separated into four major divisions. That of Part I is related primarily to the background of modern commercial development. In Part II, I have presented in some detail not only the preliminaries for the growth of the leading commercial nations but a concrete study of their present commerce. I have presented also the trade of other regions of the world, apportioning to each the attention it seemed to merit. I have devoted Part III to a study of the trade in the great staples and in other commodities, including manufactures, which now move in large quantities across national borders. Part IV contains a study of commercial facilities and the principles of international trade. Of necessity, the question of the concrete application of principles, nation by nation, is a part of any discussion of world trade, and I have given attention to these matters. An effort has been made, in preparing the illustrative material, to supply figures and situations that are representative of normal con-

ditions in preference to those prevailing during periods of extreme activity or inactivity.

Commerce is an ever changing affair—changing with respect to its composition, to methods involved in its conduct, and to the attitude of trading nations toward other trading nations. It could hardly be otherwise among peoples who are in constant quest of trade advantage, or who are sometimes on the defense against the policies of other nations. The period of depression, which began for most nations in about 1929, was especially productive of new, or revived, policies, all of which have put additional handicaps on the flow of commerce. Whether or not these policies portend a long period of commercial restrictions is for anybody to decide. But of this we are certain—that if the policy of some of the leading countries be complete self-sustenance, the goal is not possible of attainment without great national sacrifice and without material changes in ideals of standards of living. Possibly a fuller comprehension of the great price we must pay for nationalism will become the deciding element in the revival of a spirit of more liberal treatment of traders beyond national borders.

I. L.

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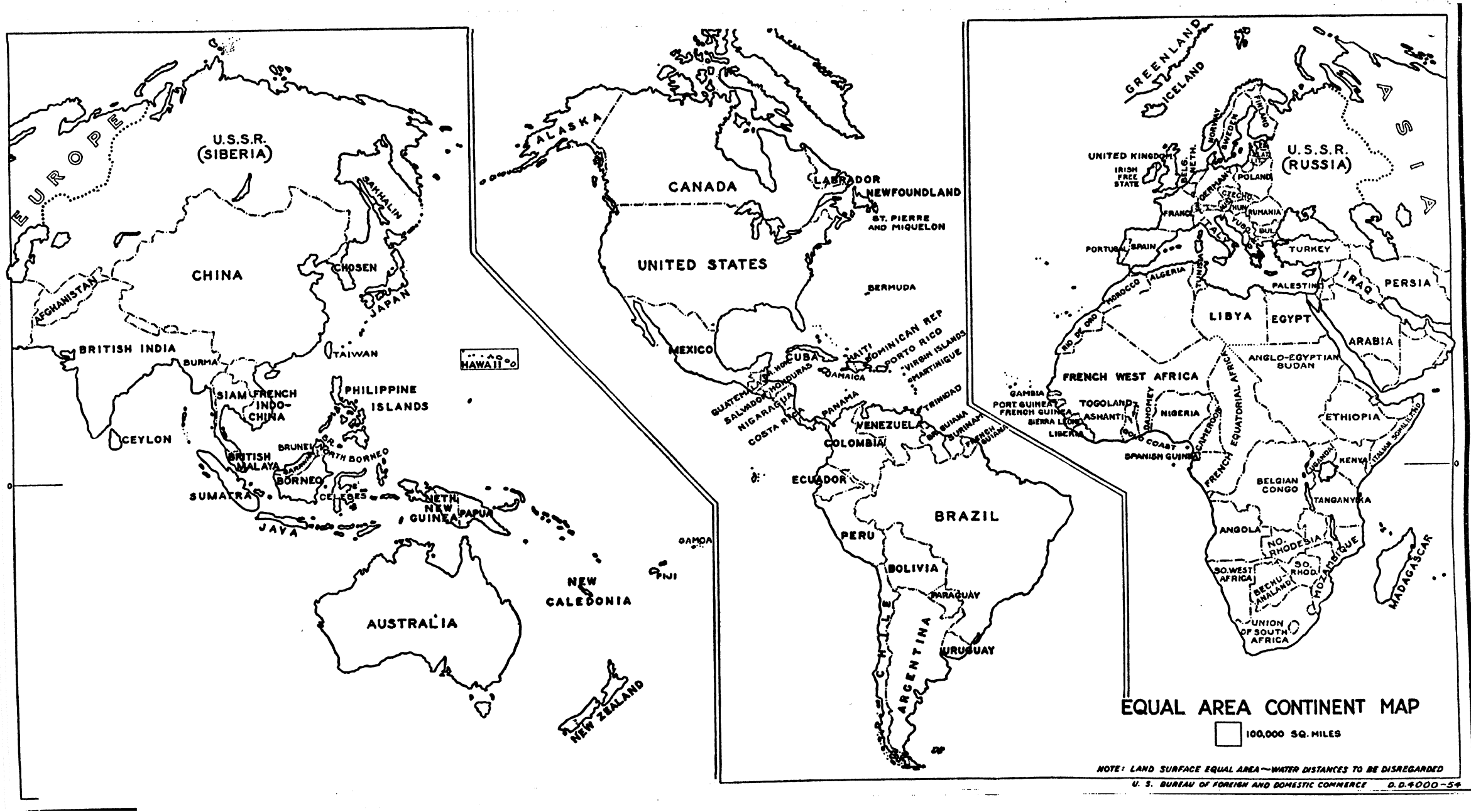


FIG. 1. EQUAL AREA CONTINENT MAP

PART I
GENERAL CONDITIONS

CHAPTER I

BACKGROUND OF MODERN COMMERCE

World commerce, as a comprehensive enterprise, is of recent origin. Although the explorers of the fifteenth and sixteenth centuries brought to light many new lands, the older countries were not as yet equipped either industrially or commercially to take advantage of their discoveries. A long period of preparation was necessary. In consequence, for several centuries only superficial trade was carried on with the newly discovered areas, and these remained largely as regions of unknown, or at least unappreciated, opportunities until the industrial development of the nineteenth century revealed their possibilities as markets and opened their resources for the benefit of world trade and industry. In 1850 the commerce of Africa was confined mainly to a few regions around the rim of the continent; South America was not much more than a richly endowed land awaiting development; migrations which were necessary to bring Oceania to the fore had not yet begun; and even large sections of North America, including the portions of the United States west of the Mississippi river, were still undergoing settlement. And, of course, China and Japan, at this date were practically closed to the commerce of the world. A remarkable change has come over the enterprise of the earth during the period from 1850 to the present. The underlying conditions of these changes have been the moving forces in the type of commerce and industry as it exists to-day.

What the Past Contributed

Commerce is not merely buying and selling. It comprehends, in addition, an organization both domestic and foreign which makes possible ready contact between merchants and consumers and supplies facilities for financing, storing and transporting goods. At present, under the system of highly developed specialization, these functions are performed by agencies which themselves have grown into service, largely by a process of trial and error. Experience has demonstrated to the participants what form of organization is best suited to their needs. In the absence of such an organization, trade could not proceed much beyond

the stage of barter, and the effective areas available for commerce were confined necessarily to relatively small local markets.

The experience of past centuries taught valuable lessons in the use of some of these facilities, but it was remarkably deficient in instruction in others which, in fact, have become the key to modern growth. These unlearned facilities were necessary if trade was to expand to great volumes, and if it was to acquire the power to penetrate into areas which were distant from natural means of transportation.

Exchange in the form of barter is practically as old as the human race, and the use of media of exchange of rather general acceptability dates back at least to the beginning of recorded history. Here, experience taught valuable lessons; the application of this experience was modified from region to region, and from time to time, as the occasion required. Sometimes the money was gold and silver, sometimes copper, or this metal in combination with some others; sometimes it was not metal at all, but various kinds of commodities; upon occasions it was food-stuffs, and sometimes merely token money. But whatever the kind, it served the purpose of effecting exchanges with the minimum of effort.

Banking

Credit institutions, also, are of ancient origin, but their development has been by no means continuous. Their rise and fall has frequently been contemporary with the fate of the country in which they were developed. In some cases they were completely obliterated with the destruction of the nation. But they appeared again in other regions when industry required their services and flourished while the nation flourished. Whether or not the knowledge of what predecessors had done was transmitted to newer areas is not always clear from the records. It sometimes seems as if necessity were the mother of invention, and that when the occasion arose requiring the use of a credit structure, the structure developed to satisfy the new demands. At any rate, all the earlier nations which enjoyed a considerable commerce were in possession of a developed banking system.

We may give a few examples. The status of financial institutions among the Greeks is shown in the following statement:

It had long been the practice to deposit money in the temples, and the priesthood used to lend money on interest. This suggested to money-changers the idea of doing likewise; and Pasion founded a famous house at Athens, which operated with a capital of fifty talents, and had credit

in all Greek centers of commerce. Thus business could be transacted by exchanging letters of credit instead of paying in coin; and the introduction of this system, even on a small scale, shows the growth of mercantile activity. Money was now much more plentiful, and prices far higher than before. This was due to the large amount of precious metals, chiefly gold, which had been brought into circulation in the Greek world in the last quarter of the fifth century.¹

The bankers of Greece, and subsequently of Rome, exercised nearly the same functions as those of the present, except that they do not seem to have acquired the function of issuing bank notes. They received money on deposit, which was paid out on order, much like our check system. They loaned the balances left by their customers, usually at high rates of interest; but they found it necessary to keep a certain amount of treasure on hand to meet the demands of those who wanted money; herein is the suggestion of a reserve.

Institutions of this type seem to have disappeared during the chaos which followed the decline and fall of Rome. But they reappeared again when the Italian cities rose to prominence as medieval traders. The Bank of Venice is said to have been the forerunner of banking in modern Europe; but at least for many years, it was not a bank in the modern sense; it was more largely an institution which aided the government in collecting forced levies and in administering annuities, which were the outcome of this system of public finance. Some persons have traced the origin of modern banking to the money lenders of Florence where for a time, at least, money lending seems to have been an activity of some of the leading mercantile houses. Several of these ran into difficulties in 1345 because of the failure of several large borrowers to make good their loans. But banking as an institution in that city survived this catastrophe. Between 1430 and 1433 seventy-six bankers at Florence are said to have loaned 4,865,000 gold florins. At one time, this city was said to have been the location of more than eighty bankers.

When commercial supremacy passed from the Mediterranean to the Atlantic countries of Europe, banking institutions appeared to administer to the financing of trade. The business was developed from several kinds of enterprises, such as the goldsmiths who accepted deposits for safe keeping and eventually began to lend on the basis of the deposits they had received. But eventually, the business came into the hands of those who were organized for this purpose alone.

¹ J. B. Bury, *History of Greece* (The Macmillan Company, New York, 1902), p. 536.

The growth of banking in Holland revealed many of the features of the modern credit institutions. At the close of the sixteenth century Amsterdam became the leading city for international dealings. Specie flowed in abundantly in payment for goods and for the service of Dutch shipping. "This stream of payments often made it convenient to settle other transactions also through Amsterdam as a financial center, and thus both the variety and the amount of bills of exchange, coming into the Amsterdam market for payment or for sale, rapidly increased." Thus there developed the dealing in foreign exchange and the purchase and sale of coin and bullion. The bank also accepted coin on deposit and transferred credits from one account to another. With these dealings "the business of lending was also carried on . . . as a matter of course, so that it is probable that by the end of the sixteenth century the issue of notes was alone wanting to make the development of private banking in Amsterdam complete."²

The business of banking was introduced into England in the seventeenth century with the goldsmiths as the leading entrepreneurs of this type. They seem to have received their inspiration from similar practices in Holland.

In some instances the great banks of modern times came into existence as an aid to government in financing its affairs. This was the case of the Bank of England which was chartered in 1694. One reason for the chartering of the First, and Second, United States banks was that they were to act as fiscal agents for the government. A few private banks had been chartered in the United States before the appearance of the First United States bank in 1791, although there was some opposition to banking institutions here, as in England, in the earlier days.

The substance of this brief history of banking is that there had developed over the course of years one great branch of commercial organization which through experience and practice was ready to serve the business of the coming era.

Manufactures

It is impossible to separate the history of manufactures from that of mechanical sciences for the reason that in the modern era at least the growth of industry has been promoted by the development of understanding of scientific principles. This is notably the case not only with

² C. F. Dunbar, *Chapters on the Theory and History of Banking* (G. P. Putnam's Sons, New York, 1909), p. 95.

the various divisions of physics, but more particularly in the last half century with the great expansion of chemical knowledge.

The merchants of to-day, whether dealing in domestic or foreign trade, owe an enormous debt to the inventors of the second half of the eighteenth century whose discoveries paved the way for a mechanized system of production. Thereby was made possible cheap, quantity production; given the proper facilities for transportation, the opportunity was opened for world-wide markets on a large scale.

It is customary to say that the mechanical age dates from the inventions of James Watt, and no one would attempt to underestimate the importance of his work in turning productive enterprise into new channels. During the centuries before his time all goods were produced by hand labor with the assistance of very simple implements; this was true also of agricultural pursuits. But the fact is sometimes overlooked that a long period of preparation had been necessary before a Watt could appear upon the scene.

Many mechanical ideas which are involved in the machine processes of to-day were employed by workers over two thousand years ago. These people had learned to use levers, pulleys, wedges, wheels and axles, both as simple devices and in combinations. Some of the great structures, like temples, monuments, and aqueducts, bear testimony to the fact that the builders possessed a high degree of skill both in making calculations and in executing their plans. The early workers made use also of mechanical contrivances for grinding grain, pressing grapes, making furniture and gems, pumping water, and lifting heavy weights. These are only a few illustrations to show that the use of mechanical arrangements appeared very early among the historical peoples. They probably did not understand the mathematical laws which described the labor economies of their instruments, but these were ascertained in time, and their discovery marked a great step forward in the use of mechanical devices. Thereupon, the development of machines no longer depended upon experience, but upon the application of mechanical principles.³

We should not assume that simple tools made necessary a poor quality of work. In fact, the physical evidence, as in buildings, sculpture, ornaments, and various classes of art, reveal both accurate and clever workmanship. In this connection Professor A. P. Usher says:

The highest quality of work has been done with the simplest appliances. So too, periods of technological advance are not necessarily periods of im-

³ I. Lippincott, *Economic Development of the United States*, 3rd ed. (D. Appleton and Company, New York, 1933), p. 14.

provement in the style or finish of the work. Many of the misconceptions of the technique of antiquity are due to the naive assumption that good work implies elaborate tools and mechanisms. . . . More frequently, technological advance merely reduces costs and opens up possibilities of a larger volume of production. We produce to-day different but not better linen or furniture than was made in ancient Egypt; we cannot produce any better porcelain than the early Chinese porcelain; nor can we make any better buildings than those of ancient Greece and Rome.⁴

Contributions of Science

Throughout the centuries, the practical worker with mechanisms enjoyed an advantage which was denied to students of the pure sciences, namely, he was not handicapped by classical or scholastic theories concerning the order of nature. As a rule, he followed the Baconian method of recording the available facts obtained as the outcome of actual observations, and he tabulated the results. In short, he was not guided by abstract theories which he concocted within his own mind, but by natural occurrences, whether they agreed with his reasons or not. When students of science adopted this method they shot straight forward to new discoveries. But it happened, at least as long as the speculative world held to scholastic methods, that the contributions of the mechanical geniuses were rarely recognized, and were never appreciated. Thus no name can be attached to hundreds of useful improvements. Nevertheless, the practical man was busy, and industry in the seventeenth and eighteenth centuries fell heir to many contrivances which laid the basis for further improvements.

One of the greatest names in this era of preparation was that of Leonardo da Vinci (1452-1519). "He was not a scholastic, neither was he a blind follower of classical authority. . . . To him observation of nature and experiment were the only true methods of science."⁵ He met the needs of his crafts by experiment, and it was said of him that his "thirst for knowledge was even greater than his love for art." If not the originator, at least he was one of the immediate forerunners of modern mechanical engineering. To him are attributed a large number of inventions and discoveries. But of much more importance than what such men did in a mechanical way was the new frame of mind they were creating. The substance of this was that natural forces can

⁴ Abbott P. Usher, *A History of Mechanical Inventions* (McGraw-Hill Book Company, Inc., New York, 1929), p. 106.

⁵ W. C. Dampier-Whetham, *History of Science* (The Macmillan Company, New York, 1930), p. 118.

be learned, and their operation interpreted, only in terms of what actually happens. It was this frame of mind, more than anything else, that made possible the coming age of mechanical discovery.

The invention of the steam engine, with the power that it was eventually to supply to industry, may be regarded as only a symbol of the new age. It was only one invention among many. It was basic, to be sure; but even steam power would have been fruitless had not hundreds of other inventors devised machines to which this new power could be applied. This is not the place to discuss these inventions, but we may suggest that they came to the textile industries, to the manufacture of iron, and subsequently of steel, and to rail and water transportation. Although the telegraph was in operation before 1860, the great age of electricity did not begin until after that date, and the inventions in this field created a new type of industrial revolution. The real beginnings of industrial chemistry are of even a later date, but they too have contributed enormously to the creation of a new industrial era. Meanwhile, improvements in agricultural methods, which had their beginnings at about the time of the first industrial revolution, have moved on until agriculture also not only benefits by hundreds of inventions and improvements applying directly to farming, but by many more, the results of which are more or less incidental.

The United States has probably been the beneficiary of more inventions than any other country; but the inventive spirit here is only an illustration of what is transpiring in other industrialized countries. In the ten years ending with 1930 the applications for patents were on an average of 88,500 a year, and this average has been increasing steadily from decade to decade. In the fifteen years from 1836 to 1850 the annual average amounted to only 14,060.⁶ Many of these, of course, were of only minor importance, but some ideas blazed new trails and laid the foundation for new industries, contributing thereby not only to the diversification of domestic industrial effort but to foreign trading in new products as well.

Migrations

The movement of people over the surface of the earth is not a modern phenomenon. Primitive man probably did much exploring, and this mere distribution was probably a process of slow migration. Likewise, in historical times, there have been records of considerable migrations, but neither in respect to character nor magnitude can these

⁶ Figures include patents for inventions, designs, and reissue of patents.

be compared with the population movements of the nineteenth and early twentieth centuries. In a sense this movement was commercialized, or at least it was until very recent years when some countries began to put rigid restrictions on immigration. But at that, even to-day, various regions of the world operate under a contract system by means of which laborers are brought from other regions to work either on seasonal jobs or for a considerable period. Just before the war began, in 1914, it was estimated that over ten million people annually crossed all the national borders. But, in the great majority of these cases, these people moved of their own volition.

Large scale migrations have been made possible by conditions which the new industrial world has created. In the first place, industrial expansion has created jobs at which immigrants can be employed. In many instances their labor has been necessary in opening plantations, in developing mineral resources, in building and maintaining railroads, and often in doing mere manual labor. But the significant fact is that both industry and commerce have created new places for the immigrants outside their own country, and that their labor has been of material assistance in promoting industrial growth in the regions to which they have gone.

Improvements in means of transportation and lowering the cost of travel notably after 1850, with the construction of larger and faster vessels, have aided the movement. Commercializing the traffic by steamship companies and others worked to the same end. In many instances, the large passenger carriers have been designed specifically to transport the human cargo with emigrants contributing a large proportion. No doubt such persons have been attracted to new lands by expectation of better incomes than could be obtained at home. Information supplied by the immigrant to his friends and relatives, advertisements by steamship companies, and in some cases by towns or regions which welcomed the new-comers, have been stimulants. Some countries have offered what to all intents and purposes is a bounty on immigration in the form of a remission of part of the transportation cost, low housing rates at transient hotels, and other devices of this kind.

The United States has received the largest numbers, partly because this country has had many more opportunities to offer, partly because of the greater stimulation from various American sources. But great numbers have also gone to Latin America, particularly to those countries which were undergoing most rapid development, such as Argentina,

Brazil, and Chile. In smaller proportion emigrants have distributed themselves in many parts of the world, and in recent years, the Japanese have become a part of the movement, migrating not only to the United States and to various islands of the Pacific but also to the eastern portion of the continent of Asia.

The arrival of passengers from abroad was first officially recorded in the United States in 1819. From that date to 1860, over five million persons were admitted to this country. Since 1860, the stream has constantly increased until checked in recent years by immigration legislation. From 1861 to 1930, over 32,000,000 were admitted. This, however, has not been a net addition to our population because emigration in some years removed upwards of a third the number which entered.

Whatever arguments may be adduced in favor of restricted immigration, at least we must give the immigrant his due. There is no question about the value of the skilled man who brings new and valuable information about some trade. But the unskilled man also contributed a valuable labor service. Such men helped to build railroads, improve highways, open farms, mines, and to supply labor to factories. In many cases, natural resources have been largely developed by immigrant labor.

Foreign Investments

This also has become a new feature, at least considered from the point of view of magnitude, in the speeding of industrial and commercial expansion. Britain has been a pioneer in this business; but notably since 1870, Germany, France, Netherlands, Belgium, and particularly since 1920, the United States and Japan have joined the ranks of investing countries. The rapid accumulation of funds to be used for investment at home or abroad is itself a very modern phenomenon and is to be accounted for mainly on the basis of the huge productivity of the modern industrial organization. Before the depression fell upon the world the British overseas investments were variously estimated at from \$12,000,000,000 to \$15,000,000,000, and those of the United States were approximately the same amount. A number of billions have been loaned by the other countries mentioned above.

These funds were put to various purposes, but whatever their use, the result was an increase in the capacity of the world for the production of goods. Mining of various descriptions attracted large amounts; plantations, of which the production of rubber is an out-

standing example, have drawn large sums; capital has been invested in the building of railroads, the improvement of ports and harbors, in the maintenance of foreign banks and agencies, in mercantile establishments, and in foreign factories. Large sums were loaned to foreign governments, which often used such funds in a manner which acted either as a direct or indirect stimulant to expansion.

The Age of Transportation

The agencies which we have discussed above—the growth of systems of exchange, the development of banking institutions, the coming of technical improvement which laid the foundation for mechanized production, the migrations of people, and the huge investments of capital overseas—were effective enough in themselves, but they could not contribute maximum service without another type of development, namely, the introduction of vastly better means of transportation than those which had prevailed up to the early years of the nineteenth century. Whatever may be said in favor of steam-power as an agency for greater production, this would have been of little avail without wider markets in which factory goods could be sold; it is the growth of markets that makes expansion of production possible.

Effective transportation is, therefore, the key to industrial progress. Until the early part of the nineteenth century, remarkably little had been done to improve upon the methods of transport which had prevailed for many centuries. This was particularly true of the carriage of freight, or even passengers, by land. For long distance conveyance, the streams were the only sources, and in the case of rather swift currents, as with portions of our Mississippi, most of the freight could move only in one direction, namely, down-river.

Conditions in England, which was as far advanced as any country in internal means of transport, have been described as follows:

The lack of means of communication was another great obstacle to industrial progress. The raw materials of industry and the finished products had to be moved in many cases on pack-horses, as the roads were useless for heavy vehicular traffic. But any great development of industry involved an increasing division of labor, and good facilities for transport were therefore imperative. Observers . . . all comment upon the badness of the highways. . . . After 1750 there was rapid improvement in the main roads, and as a result of this, the large towns were connected by coaches, and wagons replaced pack-horses for heavy goods. What was wanted was better

road construction by competent engineers, and this came in 1802 when Telford turned from the construction of canals and bridges to the making of well-bottomed roads, and in 1815 when Macadam taught the art of road-draining and perfected the surface of the roads.⁷

But this was only a beginning. Such roads improved only the conditions for animal traction. About the turn of the century, inventors were endeavoring to apply steam-power to water navigation, an effort which bore fruit in the United States in 1807 when Fulton's boat, the "Clermont," made a successful trip up the Hudson to Albany, and on the Mississippi in 1811, when the steamboat "New Orleans" moved down the Ohio and Mississippi. Not long after, attempts were made to apply steam-power to ocean navigation. The American ship "Savannah," which crossed the Atlantic in 1819, is sometimes said to have been the first ocean vessel driven by steam-power, but, in fact, the "Savannah" was a sailing vessel using steam as auxiliary power. The crossing by the "Great Western" in 1838 may be regarded as the real beginning of the steam navigation of the ocean. But even at this date, the use of this power was only in its early experimental stages. As yet, no one had any conception of the most effective ways of applying the new power in driving ships, nor of the type of vessel which might be developed with more efficient use of steam.

With respect to railroads—Watt himself had tried to adapt the steam engine for traction purposes, but had found one great obstacle in the low pressure of the ordinary Watt engine. When Trevethick, in 1802, made use of high-pressure steam, the possibilities of a locomotive were moved a stage nearer achievement. Various other discoveries followed until, about 1814, George Stephenson made improvements which brought success. The Stockton and Darlington railroad was opened in 1825, Liverpool and Manchester were joined by railway in 1830, and London and Birmingham in 1838. The Baltimore and Ohio, the first line in the United States, was begun in 1828. Here, as with ocean transport, these early attempts hardly advanced steam transportation beyond the experimental stage. Many problems remained for solution. Yet development was remarkably rapid. Within a hundred years of the building the first line the mileage of the world was increased to more than 700,000.

The effective development of other means of communication, such

⁷ F. W. Tickner, *Social and Industrial History of England* (Longmans, Green and Co., New York, 1924), p. 522.

as the telegraph, telephone, wireless, ocean cable, electric railways came at a later date, but they, also, have contributed to the expansion of every form of business enterprise.

REFERENCES

For references see end of Chapter II, page 32.

CHAPTER II

GENERAL CONDITIONS

It is often said that the basis of commerce is a difference of some kind and that the way to make a nation self-sustaining is to get rid of the differences. There is serious doubt about the second proposition and the first needs qualification before it can be accepted as an adequate explanation. We in the United States are importers of cotton, iron ore, petroleum, copper, and even of some cereals, notwithstanding the fact that we are the greatest producers of all these commodities. A part of the difficulty lies in the fact that we group goods into classes and compare them as such. Much of the wheat that we import is of a different kind from that which we produce, and this is true of iron ore and to some extent of petroleum. Yet when properly interpreted these differences are the main causes for the flow of commerce. We shall discuss these matters later.

Commodities of Commerce

Hundreds, perhaps thousands, of individual articles move in international trade. Practically every region, however primitive the inhabitants, has something to contribute. This signifies that civilized man has carried his goods not only into the easily accessible parts of the globe but into many remote sections and has brought back for some kind of consumption such commodities as he thought might be of use in the larger world. Even the names of many of these articles—such as tonka, copaiba, tagua nuts, cacao beans, toquilla fiber, zirconium, kapok and ylang ylang—to name only a few of these commodities—are not a part of the popular vocabulary. But, at that, the great bulk of the world's commerce is involved with things of general consumption.

A moment's thought would suggest that these are made up chiefly of food products, textile fibers, various minerals, and manufactured goods, because food, shelter, clothing, and means of production are the most important requisites of living in civilized society.

In the food-product group, the cereals are of the greatest importance,

with wheat in the western world and rice in the Orient being the leading commodities. In 1931-1932, the leading exporting nations shipped into international commerce over 760,000,000 bushels of wheat and over 12,000,000,000 pounds of rice. Compared with the two grains just mentioned, corn, rye, oats and barley play a small part in international trade, although considerable quantities are exported.

Other large items involved in foreign shipments are meats and animal fats. In normal years, the exporting countries send abroad upwards of 2,500,000,000 pounds of beef and its products and over 2,000,000,000 pounds of pork products. This does not include mutton, canned meats, fish, butter, poultry, cheese, and eggs. Thanks to the newer means of refrigeration, it has become possible to ship such a perishable as butter long distances, even across the equator, to market, a condition which has redounded to the advantage of New Zealand, Australia, and Argentina, which together in 1931-1932 exported over 500,000,000 pounds of butter. Large quantities were exported from some countries of Europe. Likewise, in recent years, the vegetable oils, or the seeds or products from which these are produced, have risen to an important place in trade among the nations. In the aggregate, copra, coconuts and coconut oil, linseed and its oil, cotton seed and oil, sesame, poppy seed, olive oil, rape, mustard, and various others, add both a large volume and value to international trade. In 1931, India alone exported over 2,000,000,000 pounds of oil seeds, and French West Africa shipped over a billion pounds of peanuts, most of which were used in the manufacture of oil.

Of equal importance are the textile fibers, which are the raw materials for cloth, clothing, rope, twine and bagging, to name only the most obvious uses. Of these cotton, wool, silk, hemp, sisal, and jute are the most important, but the trade makes use of dozens of other fibers for textile purposes. Among them are the wool of the Llama and the Vacuña, the hair from various kinds of goats, and various reeds and grasses which are employed in one way or another in the textile business. Since 1900, rayon, a material manufactured mainly from wood pulp, has been adapted to many textile uses, and this commodity is exported in the form of yarn, cloth, and finished fabrics. As a rule, upwards of 12,000,000 bales of cotton, and over 2,000,000,000 pounds of wool are shipped annually into international trade.

Mention should be made also of another group of goods in which international traders have a vital interest, namely, fruits, nuts, vegetables, condiments, and beverages. In this class are oranges, lemons,

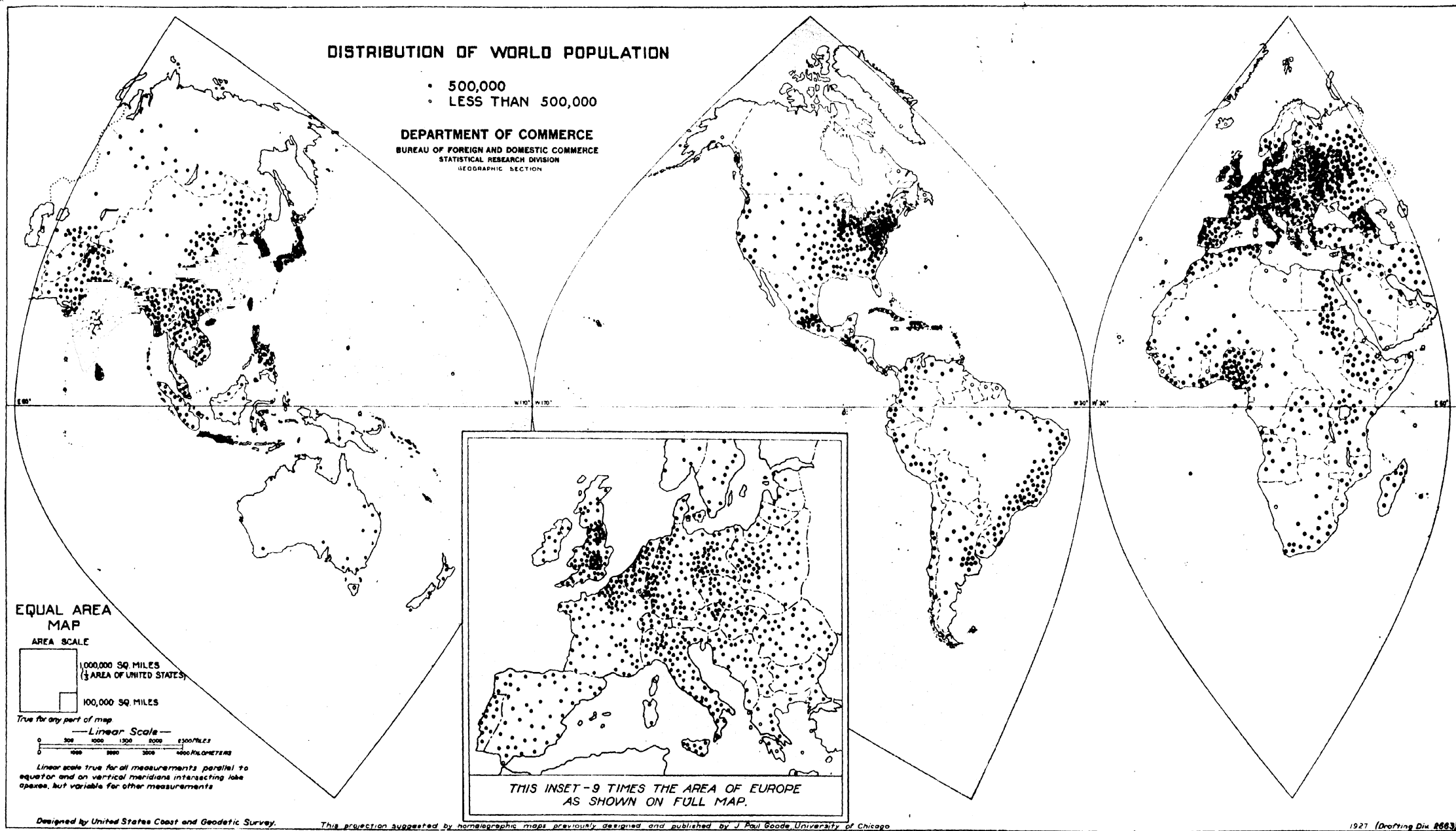


FIG. 2. DISTRIBUTION OF WORLD POPULATION

grapefruit, pineapples, dates, figs, sugar, coffee, tea, cacao, and wines. The processes of canning, and in the case of some fruits, of drying, have made possible long-distance trade in many such commodities, and to-day certain types of dry vegetables are shipped half-way round the globe, and large quantities of fresh vegetables move in trade among nearby countries.

Of the commodities named above, sugar, tea, coffee, and cacao often contribute a large value to foreign shipments. The sugar trade of the world sometimes exceeds 12,000,000 tons annually, and the coffee trade is often in excess of 3,000,000,000 pounds. The export of cacao from the leading countries is over 700,000,000 pounds. In normal years possibly 400,000,000 gallons of wine enters the trade of the Mediterranean countries.

For better or worse, the great nations of to-day have adopted capitalistic methods of production, with processes highly mechanized, and with great machines driven by electric or steam-power. This form of organization could not exist without an abundant supply of various minerals—some for power purposes, as with coal and petroleum; some for the construction of machines and for the buildings which house them; and some for various other uses which of necessity are connected with living in a high powered society, such as the building and operation of railways, hotels, office buildings, and general construction work. Since the minerals are very unequally distributed over the world, it is one of the functions of commerce to deliver them at the places where they are needed.

This class of materials includes—in addition to coal and petroleum and their refined products—iron, copper, lead and zinc, as the most important, at least from the point of view of tonnage. But to-day the minor metals should not be omitted, for although they are not exported in large quantities their ultimate uses often make them the key to the success of given industries. This is particularly the case with the extensive use of the alloy metals; hence, nickel, tungsten, vanadium, cobalt, molybdenum, and tin, among others, occupy a most important position in modern industry. In many instances the precious metals also, gold, silver, and platinum, are mere merchandise for trade. Among the minerals we should also include the precious stones, notably the most valuable, diamonds and emeralds.

For want of a better means of classification we are forced to group hundreds of other commodities into a single class and give it the name of "miscellaneous." At least such goods are not easily classified without

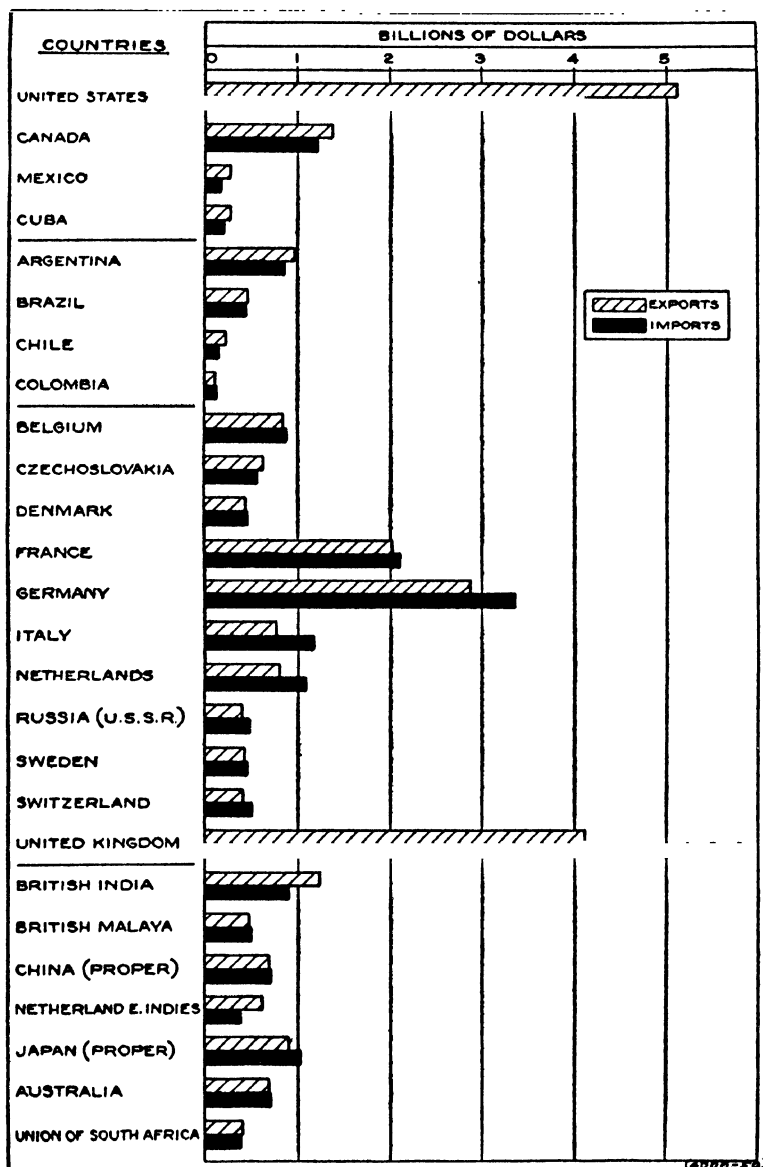


FIG. 3. TOTAL TRADE OF LEADING COUNTRIES, 1928

descending to troublesome minutiae and explanations. Our classification of "miscellaneous" would include such commodities as rubber, of which the world produces from 600,000 to 800,000 tons a year, and of which much more could be produced if the plantations were worked to capacity, and if Brazil, the original home of the rubber industry, were developed only to a moderate extent. In this class we should also put balata, a product mainly of the northern portion of South America, and gutta percha which comes from Malaya, Sumatra, Borneo, and Java. And, if the users of chewing gums will permit, chicle, an output mainly of Yucutan. Then, our present classification would cover spices, such as pepper, nutmeg, mace, cinnamon, cloves, and various others which at one time were the reasons for intense interest in the Oriental trade and which contributed enormously to the opening of the Middle and Far East to the commerce of the West. Under this classification would fall, also, various tanning materials, gums, resins, dye woods, medicinal plants, and thousands of manufactured articles, some of which serve very humble wants, but others of which administer to that vague and indefinable class which we call "luxuries." And probably of greater significance are the baser things—namely, tools and machinery of many kinds, to say nothing of automobiles and other vehicles of which the United States alone ships to the external trade sometimes to the tune of more than \$500,000,000 a year.

Generally speaking, the articles referred to above constitute the main commodities of commerce. In the years from 1911 to 1913 the average annual value of the trade of the world, imports and exports combined, was nearly \$40,000,000,000; it was \$68,000,000,000 in the prosperous times of 1929, but dropped to \$26,000,000,000 in 1932, when commerce and industry had fallen into the depths of the depression.

Foreign Trade Organization

In order to handle this trade, there has been developing through the centuries an organization which now penetrates into every division of the globe. The result is that commodities, in whatever region they may originate, move over established routes to market. Thus it is not by chance that tin from the Straits Settlements or Bolivia reaches certain tin plate manufacturers in the United States, or that diamonds from Kimberley are sold to a particular jeweler in New York City, or that long staple cotton from Egypt is delivered to certain spinners in the United States or England. These commodities flow to their destined markets with a regularity and certainty that sometimes amazes the

student of marketing. Vanadium from Peru, chromite from Portuguese Africa and French Oceania, shellac from India, Siam and Indo-China, and furs from Siberia moved to ultimate consumers over established routes. Members of the trade in each of these commodities can mark the channels and indicate the important points along the line of travel.

There are great central markets for some staples, such as wheat, cotton, and wool, and all persons who buy and sell know the market-places and understand when and where contact can be made. Somewhere on their way to final consumers these staples may converge on an exchange, or in an auction market, to which all traders have access in one way or another. These markets are often connected by telegraph with similar markets elsewhere so that buyers and sellers may know promptly prevailing conditions.

Even when goods are not sold by the exchange method, the routes are definitely known. A prospective buyer can learn in a short time where to obtain an automatic stoker, plow points, or mine ventilator fans, although he has never made a similar purchase before. In a similar way, produce exchanges, mail-order houses, and department stores are concentration points for buyers and sellers. Such organizations, therefore, face in two directions: first to producers who have something to sell, in which case one of the important functions of the store is to assemble goods from a number of producers; and second, to buyers who take goods from the market.

An economic organization seems to be an extremely complex matter, which in fact it is, if one tries to regulate it. But analysis reveals the fact that it is made up of a number of parts which function together more or less harmoniously to carry out the purpose for which the organization exists. The appearance and development of these various parts has been a matter of great importance for the expansion of world commerce. Transportation is of first moment. It is the agency by means of which goods are moved physically from places where they are produced to regions where they are consumed. The railroad, as every one knows, is a relatively modern device. The first line in the United States, using the term in its proper sense, was the Baltimore and Ohio, begun in 1828. A system covering practically the whole country was completed within a hundred years—with a mileage of about 262,000, or upwards of one-third that of the world. Europe contains some 250,000 miles, and Asia some 83,000. In addition, much of the world is now joined by some form of communication, whether telegraph, cable, telephone, or wireless, and these are of great value to economic enter-

prises. The more highly developed countries contain an immense mileage of improved roadway. The merchant marine of the world comprehends some 70,000,000 tons.

The physical part of this organization includes not only agencies for transportation and communication but various divisions which are concerned mainly with the production of raw materials, such as farms, forests, mines, and other physical parts. Their function is to fabricate raw stuffs into an almost infinite variety of finished goods. The commercial organization whose job it is to move all types of commodities through the channels of the market to ultimate consumers involves the work of the banker, the credit agency, the insurance concern, the warehouse enterprise, and various others. No one would contend that this organization always works smoothly; the parts frequently get out of adjustment; but because of its complexity, it is difficult to bring the disordered members back again into their proper relations with the others without readjustments in all the other functions.

Distribution of World Products: Field Products

The total land area of the six continents is upwards of 54,000,000 square miles, but a surprisingly small percentage of this is suitable for habitation, and an even smaller amount is available for the cultivation of farm crops. Huge areas in all the continents are claimed either by mountains, deserts, semi-arid lands, or swamps; some continents, like Asia and Africa, are afflicted with all these conditions. In South America and Africa, the dense tropical forests extend approximately through the middle of the land mass from coast to coast. In China, notwithstanding the great needs of the huge population, the cultivated land is only about ten per cent of the total, due chiefly to extensive desert and mountain areas. With regard to Africa, the Sahara, which is estimated at from 3,000,000 to 4,000,000 square miles (to say nothing of other smaller deserts, semi-arid lands, and the tropical forests), removes the greater part of the continent from the possibility of economic uses. But in proportion to its size, Australia probably suffers more from blighted areas than do the others. Much the greater portion of the continent is either desert or arid and, as a result, only the southeastern part is capable of sustaining a considerable population. In 1932, only 34,000,000 acres were reported as arable, some 5,000,000 acres in meadows and pastures, and about 390,000 in trees and shrubs. As for the United States, west of the one hundredth meridian, the greater portion of the land is either mountainous, or semi-arid and desert. But, at that, the

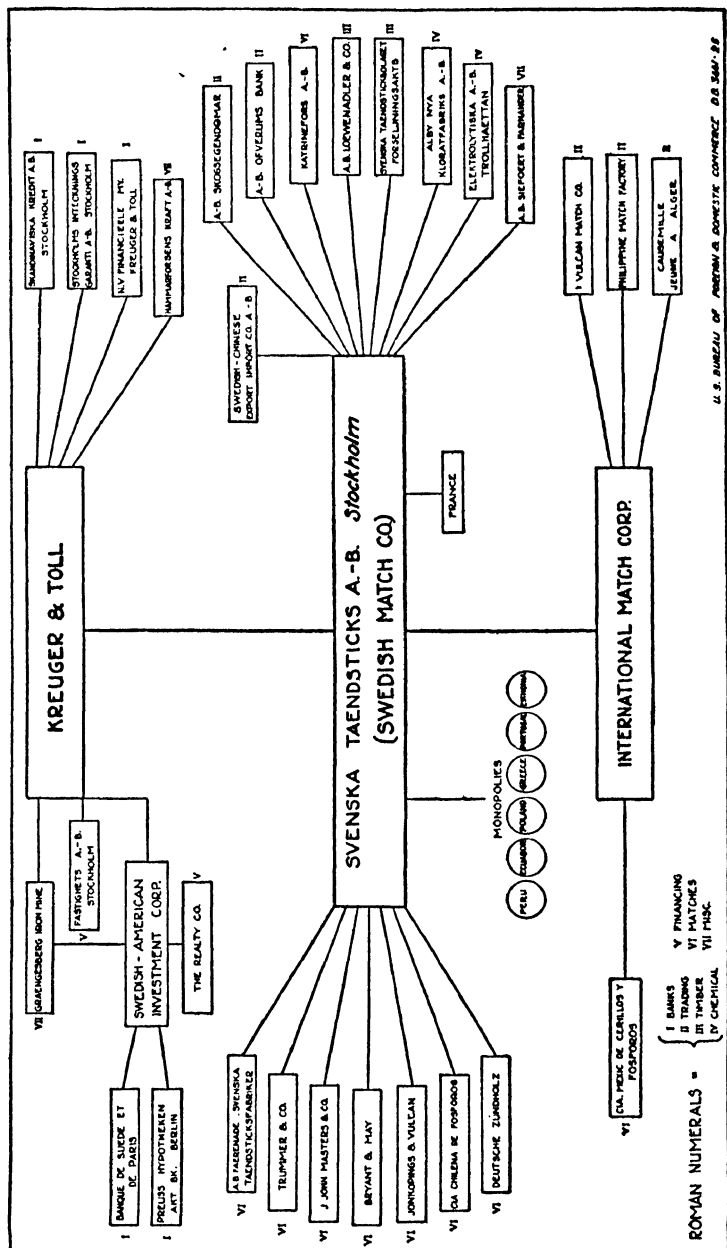


FIG. 5. INTERRELATIONS OF INTERESTS IN INTERNATIONAL MATCH COMBINE, 1928

cultivable land both in the United States and in the rest of the world is greatly in excess of the needs of the present population.

Moreover, in practically every continent there is a possibility of reclaiming many thousands of acres either by irrigation or drainage, or both. Already, throughout the arid portions of the United States are considerable patches here and there that have been redeemed by irrigation—some 20,000,000 acres in all, and this work of reclamation still goes on. More than three times that amount has been drained.

Nor is this all. The world still contains large areas of desirable farm lands, like those in western Siberia, which have not yet been settled. Moreover, if it were necessary to do so, much of the land now under cultivation could be made to yield a much larger return per acre. This is notably the case in the United States where for the most part the methods of cultivation are still extensive. The yield varies from season to season, largely under the influence of climatic conditions, but the return in this country for wheat is rarely in excess of sixteen bushels per acre, and the average over a period of years is not much more than fourteen bushels. On the other hand, in some European countries where intensive methods prevail, the output is frequently as high as thirty bushels, or even more. In England and Wales, it is usually greater than this figure. In Germany, during the years from 1909 to 1930, the average was above thirty bushels. The record of Canada, one of the largest producers, is only slightly better than that of the United States. In some countries, even among the large exporters, the yield is low, as with Argentina, where over a period of twenty years it has scarcely averaged twelve bushels. Given satisfactory growing conditions, there is no danger of a shortage of wheat, or of any other crop, for many years to come.

In a rather broad sense, the various crops require the appropriate soil and climatic conditions for successful growth. But these conditions are not as rigid as one might suppose. With respect to wheat, it has been said that "within certain ill-defined limits climatic disadvantages can be overcome, either by special methods of cultivation, or by the breeding of varieties of wheat differing considerably in their climatic requirements from those hitherto grown. Within recent years great attention has been given to this latter subject, with the result that the climatic zone of wheat has been greatly extended."¹

A similar qualification applies to other products. Moreover, in the

¹ M. I. Newbigin, *Commercial Geography* (Henry Holt and Company, New York), p. 37.

production of cereals, or of any other crop for the market, the cost factors are important, and these include not only the outlay for land, seed, tools, and labor, but expense in delivery to the markets. In former years, some of the best cereal lands in the United States could not be cultivated in competition with products grown in mediocre areas because of the expense of transportation. Moreover, mechanized agriculture on a large scale has made possible the cultivation of land which under ordinary circumstances could not hold its own in competition with better lands, but which is not adapted to large scale production. Thus it has been said that "wheat on the large scale is not now grown in the climates best suited to the plant, and that while the acreage under wheat is often decreasing in the more suitable climates, great efforts are being made to extend it in regions much less suitable climatically. This of course means that under existing conditions climate, within certain broad limits, is less important than other factors."²

In fact, with wheat, corn, or other cereals, or with any natural or manufactured product, for that matter, the cost of production is the important consideration. Regions compete with regions not necessarily on the basis of relative climatic conditions, but on the basis of cost, which involves a number of elements both in production and marketing. We shall see presently that this idea applies also to the production of minerals, where in many instances the exploitation of certain regions has been abandoned not because of exhaustion of the resource, or even of near exhaustion, but because another resource has been discovered or a technical process devised which raises other areas to competitive importance. In other words, for some reason the cost of mining, milling or marketing, has proved to be lower in the new region than in the older established region.

A production map of the world would reveal the fact that the cereals are grown in a rather wide belt around the world, and that they are crops of both the northern and southern hemisphere. Argentina is the principal producer in the latter areas, but considerable crops are produced also in Australia. Due to the conditions discussed above, the production of cereals is widely distributed, but only a few countries are export producers. The principal nations in this class with respect to wheat are: the United States, Canada, Argentina, Russia, and Australia, although minor quantities are exported, at least periodically, from a number of other nations. With respect to rice, the chief exporters are

² *Ibid.*, p. 37.

British India (Burma), Indo-China, Siam, Italy, and the United States. But other countries also frequently have a surplus for external trade.

In all except a very few cases, the crops which are now produced throughout the world were not indigenous in the present regions of cultivation. They have been transferred to the newer areas and adapted to strange conditions in the new habitat. Emigration has been one of the most effective means of transfer, for the new-comers have usually brought with them the crops with which they were familiar and have then made adjustments to conditions as they found them. Thus the era of exploration and discovery was also a great era of crop transfer. In this manner, practically all the great crops have been widely distributed over the earth; this process was applied also to many money-making crops, such as coffee, cacao, spices, and subsequently, to cotton, hemp, and various vegetables, not to name all the products.

In more recent years, the transfer and adaptation has been made under scientific guidance, usually by experts who have made a study of conditions. In this manner plants, bulbs, flowers, and even trees, have been taken from their original habitat for cultivation in other parts of the world.

One of the most interesting stories is that of rubber. This is a relatively new commodity in the commercial world. A few uses for the product were discovered in the early part of the nineteenth century when Amazonia was practically the only source of the raw material. Small shipments were made from the province of Para as early as 1827. Meanwhile, new resources were opened in the basin of the Madeira, the Purús, and other tributaries of the Amazon. Peru began to export rubber in about 1853, Bolivia in 1865, and Colombia in 1869. Shortly after, Sir Henry Wickham conceived the idea that the Brazilian type of rubber could be grown in the Near East. In 1876, he obtained in Brazil the seeds of *Hevea Brasiliensis*, had them germinated in the Kew Gardens in London and sent the young plants thence to the East. Some years of experiment were required to adjust these trees to the new surroundings, but eventually the experiment was a success. The outcome was the creation of a new competitive area; and the curious fact is that the plantation product now dominates the market, whereas the natural product from Brazil has fallen to insignificant quantities. As an annual average from 1926 to 1930, the Middle Eastern plantations exported 683,000 tons compared with 22,000 from Brazil. In 1910, the plantation export was only 11,000 tons compared with 38,000 from Brazil.

This is only one illustration, but it could be multiplied almost indefinitely. America began to make her great contribution to the distribution of desirable crops many years ago when Indian corn, tobacco, and potatoes were transferred from region to region until cultivation is now almost world wide. In many regions, the great staples are grown mainly for home consumption, but in others the export business is the dominant consideration. In that case, the product must take its chances with international competition.

Distribution of World Products: Minerals

We may divide natural raw materials into two capital classes: (a) those which are genetic, or reproducible; and (b) the vanishing or wasting resources. Under proper systems of cultivation the products of forests, fields, and waters may be reproduced indefinitely; but this is not the case with the minerals. When coal, iron, copper and petroleum are exhausted we know of no way of restoring the vanished materials. It is an obvious fact that these substances were deposited millenniums ago by certain natural forces which are not operating to-day, or at least, not with sufficient force to provide new supplies as rapidly as we consume the old. It is equally obvious that the metals are rather widely distributed over the earth, but that great deposits which will sustain considerable industries are limited to a very few areas. Moreover, the natural distribution has no reference to political boundaries, and thus it happens that even some of the great industrialized nations are dependent on outside sources for one or more of these essential materials. Commerce, therefore, is necessary to make up the deficiencies.

To give only a few illustrations: Only two places in the world produce important quantities of platinum, although in various regions small amounts of this metal are obtained as a by-product in the refining of other metals. Most of the world's supply of emeralds comes from only two places. No more than four regions are important producers of diamonds. Gold and silver are a little more widely distributed, but at that, one-half the world's present supply of gold comes from a small region in South Africa, and upwards of 30 per cent of the remainder is produced in a few sections of North America. The world's supply of tin comes chiefly from Bolivia and a few areas in the Malay states. Iron ore is widely distributed, but there are great differences in the deposits both with respect to quantity and quality. A few regions in the United States such as the so-called Lake Superior district, in England, and in the ore regions which are now a part of France, Belgium and south-

west Germany, contain large deposits; this may be the case in portions of Chile and southeastern Brazil, and with scattered deposits in Russia. In the case of copper, a few resources in the far-western states of the United States, limited sections of Chile, Canada, and the Belgian Congo, are the major resources. As for coal and petroleum, North America seems to have been far better endowed than any other part of the world. In fact, upwards of two-thirds the world's known coal supply is in this continent, and this is possibly true of petroleum, if we include sections in a few of the northern countries of South America. In the years from 1926 to 1930, as an annual average, the share of the United States in the world total production was approximately 36 per cent for lead, 39 per cent for zinc, 68 per cent for crude petroleum, 42 per cent for iron ore, and 41 per cent for coal. In face of the enormous domestic consumption there is a considerable surplus of most of these materials for export, and large quantities are shipped abroad in manufactured or semi-manufactured forms.

On the whole, the western world has been much better endowed with industrial metals than the Middle and Far East. The deficiencies of India, China, and Japan are notable, although they are not as apparent at present as they probably will be in the future when the vast population of that part of the world, aspiring for higher standards of living, begins to found great industries to supply growing wants.

The rarer metals, used at present mainly in the manufacture of alloys, are even more unequally distributed than such materials as iron and copper. In no case, as their name suggests, do they occur in large quantities, but their consumption is imperative for the type of metallurgical industries which have been developing over the last two or three decades. The commercial supplies exist in widely separated parts of the world, and consequently their quest is an object of trade.

This description applies also to the non-metallic minerals, such as natural nitrates, phosphate rock, potash, sulphur, graphite, and mica, to name only a few commodities of this class. They too, are widely distributed. In the case of natural nitrates, Chile is the only known commercial source.

Distribution of Timber Products

Timber, in one form or another, enters hundreds of industrial uses. Most countries possess considerable local supplies, which under proper methods of conservation, relieve them to a large extent from dependence on external trade. Nevertheless, timber, or lumber, for

specialized uses is imported from the regions of production, and not infrequently some of the common kinds which are produced domestically do not exist in large enough quantities to satisfy home needs; or, as it sometimes happens, they are not distributed within given countries in a manner which gives the home producer an advantage over the lumberman at the foreign source.

However abundant the local supply, there are always certain kinds of lumber which must be sought elsewhere. This is notably the case with cabinet woods. Moreover, large quantities of wood are imported in the form of wood pulp, paper stock, or paper itself, and in commodities of other descriptions. Canada is a large exporter of such materials, with the United States as one of the largest consumers; and in Europe, Norway, Sweden, and Finland, among others, are important exporters. These countries also send out large quantities of lumber as mine timber, shooks, rough boards, and planed materials.

The vast belt of conifers which stretches across the northern part of North America and through northern Europe and Asia, practically from the Atlantic to the Pacific, is now one of the greatest sources of this type of timber and the main reliance of the world for the future. Hardwoods are distributed in many regions and are the basis for considerable foreign trade.

Under normal conditions, the United States exports from two to three billion board feet of lumber, Canada usually ships more than two billion board feet, Sweden and Finland from one to two billion, and Norway upwards of 200 million board feet. Although we are large exporters, we are also great importers, bringing in not only the common kinds but various specialized woods, such as mahogany, several types of cedar, fir, spruce, teak, and many kinds of manufactured woods.

Although the tropical forests of South America and Africa cover a vast area they cannot be counted upon for considerable commercial supplies. In fact, in the former continent most of the countries which border on the forests are importers of certain kinds of woods. Lumbering in tropical areas presents peculiar difficulties: most regions are inaccessible; the forests themselves are often a tangle of trees, shrubs, vines, and underbrush; the trees are not as a rule in a continuous stand, a condition which greatly increases the cost of lumbering; and it is difficult to maintain roads or clearings, once these have been established.

The Human Resource

Hitherto we have spoken mainly of the physical things which are necessary for the movements of commerce. But the capacity of a country for trading is dependent, also, on a number of intangible factors. Speaking in general terms, it may be said that the economic attainments of a people depend upon three things: (a) the character of the population; (b) the kind of social institutions which they create; and (c) their physical environment. This statement, however, contains no idea as to the interaction of these elements, nor is it intended to indicate whether one is more important than the others. Indeed, no such indication can be made, because all the conditions function together. These factors are compounded in one way in the United States, and in quite a different manner in India, and in still a different way among some of the primitive tribes of Africa. The cultural ideals of a people, however derived, have much to do with the direction of their economic lives. Where the economic interest predominates, a people will bend the greater part of its efforts to trade and industry and will laud industrial accomplishments. This has been the case in America and for this we have been criticized. But when ideals clash, there is no court in which final judgment may be rendered.

Man enters as a factor in economic development in two ways: first, as a producer; and second, as a consumer. The character of economic development and of the commercial relations into which people enter is largely determined by the conduct of human beings in these respects. Physical strength, endurance, ability to resist disease or to devise means for its prevention, nervous energy, versatility, thrift and enterprise, all play an important part in constituting the right kind of men to develop a country.

Nor should we overlook the human environment. Intelligence is not a racial, nor even a national trait. The faculty of understanding, or of mental acuteness, or sagacity—however one wishes to define intelligence—is found among some people of every region of the earth; and on the other hand, mental density, or dullness, coexists in precisely the same habitats. Association of ideas has much to do with the mental growth of a people, but there must be something to associate. In a backward region, where life is static, there is little to stimulate thought and set the train of association into motion. But in a community where people have begun to be economically active, something new is presented to their thoughts and imaginations, and the process of associa-

tion has something to act upon. New ideas are presented for thought and action; these subsequent ideas suggest others, and so on. There is a momentum in intellectual growth, which increases in intensity as development takes place. It is a fair assumption that the inventiveness, resourcefulness, and business acumen which characterize the people of industrialized nations are the result of this kind of momentum which arises through association of ideas. This is notably the case with invention, where one idea suggests another; the higher forms of technical management and of business finance are a development of a similar kind. A mentally stimulating environment is necessary to economic progress.

Herein are found some of the explanations as to why the older peoples of Asia have remained relatively stationary for centuries. Habits, traditions, religious beliefs, have become crystallized, and the people can think only in terms of what they know. Lack of means of communication has prevented an exchange of ideas. Knowledge of what the outer world is thinking and achieving has not penetrated into many of these areas.

In China there are added difficulties. A feature which has characterized Chinese history since the time of Confucius (551 B. C.) has been conservatism. Even to-day this is a condition of Chinese life, and it explains much of the backwardness of the country. There are several reasons for this attitude: first, the difficulty of acquiring a knowledge of the written characters has tended to restrict education to the privileged class; second, the attitude of this class has been dominated by what might be called a spirit of classicism—the worship of the lore of the past. As a result the study of nature has been discouraged. This explains the scientific backwardness of China; whereas, in progressive countries, the growth of science has formed a basis for the development of industry, this stimulus has been absent in China.

Customs, habits, tradition, religious beliefs and formalities, and even prejudices, sometimes give character to a people, and not infrequently, these conditions operate against its economic advance. But this state of affairs is not unchangeable. In India, for example, the existence of the caste system constitutes a feature of the social system; but there is evidence to show that such customs are breaking down, and that social customs are changing under the impact of ideas received from the outer world. This also applies to the Spanish dominions which for centuries operated under the *Ley de Indias*, to the effect that "gentlemen must not mix with traders and sellers of merchandise." The old

preference for an honorable position in government service is tending to disappear, and some of the younger generation are entering business pursuits, although the entrée at times seems to be by a side door, namely the professional occupations.

The second factor, that of human consumption, is probably the strongest of all stimuli to economic activity. Where people willingly take up with new consumption ideas, and where they do not resist appeals to their wants, purchase will proceed as rapidly as the power of producing an income grows.

Whether human qualities are resolvable into something more fundamental, that is to say, into conditions of soil and climate, is not as clear as some persons would try to make it. Human creatures, like our Indians, have lived under the condition of temperate climate for ages, in the midst of great natural abundance, and yet have made little or no advance. On the other hand, many so-called backward people have revealed a high degree of economic susceptibility; they have readily taken up with unfamiliar types of consumption when they have been exposed to new conditions.

In the equalization of differences among nations, and in the breaking down of the peculiarities of habit and tradition, commerce has become a great factor. In addition, from the point of view of effectiveness of human labor, it plays a rôle of great importance. For one thing, it is a factor in the world division of labor by which people, or communities, devote attention to the things in which they have an advantage in production, and exchange with the rest of the world. Such trade economizes both labor force and the use of capital, and is an important element in human economy, whether within national borders, or international relations.

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CHAPTER III

REASONS FOR TRADING

Commerce, whether within national borders or among nations, is based on differences of some kind. As one authority said: "If we could imagine a large area of the earth's surface perfectly uniform in relief, in climate, in soil, in the occupations of its inhabitants, in its relations to surrounding areas, then obviously within such a region all forms of trade would be impossible; for there could be nothing to serve as a basis of trade."¹

We can have no objection to this statement if it is interpreted carefully, but the quotation should not be understood to mean that differences which lead to commercial growth are entirely physical; human elements play a most important part in creating the dissimilarities upon which commerce rests. Whether these varied human characteristics are the result of climatic or other material conditions, it is impossible to decide, although some writers have tried to assign to qualities of human nature, and even to forms of industries, a physical basis.

Mineral Resources

Some of the important differences, however, which lead to commercial relations, lie in the physical world. Nature has not distributed her goods equally over the earth's surface. Iron, coal, copper, lead, zinc and petroleum, among others, do not exist in equal abundance, or in like qualities, even in regions where they occur. Some countries are either entirely devoid of these substances, or possess them in inadequate quantities.

Moreover, where such materials have been exploited for some time in given regions another type of inequality occurs, namely, the resource has been gradually exhausted and what remains is of relatively poor quality, which can be exploited only at a greater expense than that which prevails at newer sources. Thus it frequently happens that regions which have dominated production for some years drop into

¹ M. I. Newbigin, *Commercial Geography* (Henry Holt and Company, New York), p. 7.

the background and others rise in importance. The history of petroleum in the United States is a notable example. The eastern section of the country, including such states as Pennsylvania, West Virginia, Ohio, and New York, at one time provided most of the output. These regions are now of relatively small importance compared with Oklahoma, Texas, and California. It may easily happen, if we continue to produce petroleum at our present annual rate, that the United States itself may lose its position as producer and the dominance pass to some other country. In that event, we may be compelled to depend upon imports to supply our needs.

These conditions are inevitable results of the fact that minerals belong to the class of wasting resources and the advantage of region after region passes away. What remains in the older areas must be exploited at increasing expense, and the business then suffers a competitive disadvantage with other regions which are coming into production. The same phenomenon has been witnessed in the United States with respect to iron ore, and to some extent with coal. In all such cases, as we suggested in the last chapter, the competitive difference that counts is the difference in cost of production and marketing. In the absence of national protective measures, designed to defend home industries against destructive competition, a vanishing industry could not long survive in competition with enterprise elsewhere.

With respect to the rare metals and precious stones, the distribution is even more unequal than with the base metals. The most important known sources of nickel are in Canada, of manganese mainly in Russia, Brazil, British India, and the Gold Coast of Africa; of tungsten, the chief exporter since 1917 has been China, with minor quantities from Burma, Indo-China, Spain, and Portugal, and of antimony, the exports are mainly from China, Mexico, and Bolivia. Smaller deposits of these metals occur in a number of places, but they are not of commercial importance, due to the high cost of production and marketing. These are only illustrations, but they could be multiplied to cover practically all the minerals. This signifies that regions which make use of such commodities must trade with the places which produce them, giving in exchange what they produce, or rendering some kind of valuable service which may be accepted in payment. It should be observed in this connection that the presence of mineral resources often attracts considerable variety of industries. Raw materials are heavy and bulky. They possess small value in a large bulk. Thus it is necessary to conduct on the spot not only the processes of mining and ex-

tracting, but not infrequently those of concentrating and refining the product. Then, machine and repair shops, stores, sometimes hotels, and small manufactories appear to supply the needs of local inhabitants. A mineral region may thus become the center of considerable industrial and commercial activity. This has happened in the western mining areas of the United States and in the nitrate and copper regions of Chile. Commerce is a two-sided affair, made up of incoming and outgoing shipments. Mineral regions sometimes supply a distant world with their products, but they must obtain the customary articles of consumption which they do not produce.

Differences in Cultures

In spite of the mechanization of industries in some countries and the standardization of products, which is a natural outcome of factory processes, the greater part of the population of the world lives and performs its daily work in a manner which has prevailed for centuries. In most instances, such people have developed their own ways of production, characterized by their particular art and skill. Most people who live by native handicraft have characteristic commodities to offer to the commerce of the world. At one time, and this condition is still true to a certain extent, the chief reason for trade with China was to obtain the goods for which the Chinese were noted. A considerable amount of world trade is still based on this kind of difference, as with Oriental rugs, Turkish bizarre ware, Swiss toys, Indian pottery and basketry, Mexican textiles, and Panama hats, originally produced in Ecuador but later manufactured in other Latin American countries. In a few instances in modern times, it has become a part of national industrial policy to encourage the development of artistic skill for the purpose of giving character to certain national products and thus secure a kind of monopoly advantage in sale in other countries. Trade schools have been developed for this purpose. This is the case with some French and Swiss products. Even to-day in Europe, one can find the native arts still prevailing in the manufacture of glass, leather products, textiles and jewelry, to give only a few instances. Thus it follows that if such commodities meet the approval of buyers elsewhere, the commodities must be sought in regions of production.

It is worthy of observation that the differences based on native arts are continually disappearing, because the dissemination of information concerning the desirability of such products encourages other regions to imitate. In many instances, where a large demand is in prospect, manu-

facture has been reduced to a factory process with quantity output as the goal.

Conditions of Soil and Climate

We have discussed this matter in a former chapter, but we may again emphasize briefly the importance of climatic conditions as a factor in world commerce. Although nature has not prescribed rigid boundaries in which her products may be developed, she has mapped certain limits within which given commodities can be most successfully produced. The tropics yield in great abundance many kinds of fruits, nuts, vegetable oils, fibers, waxes, gums and timbers which cannot be produced in temperate climates. This is equally true of the products of the temperate zones which cannot flourish in a tropical environment. But at that, the matter is not always so simple as it seems to be at first thought. Silkworms cannot endure cold climates, but silk production could be carried on in many parts of the world where the climate is suitable if certain other conditions were present. Labor cost is frequently the determining factor. An immense amount of effort and attention is required to raise the worm and to reel the filament; therefore production has succeeded only where labor is very cheap. Thus the industry has been confined mainly to Japan, China, and a few Mediterranean countries.

Differences in Industrial Stages

With few exceptions, the higher stages of industrialization exist only in the countries on or near the north Atlantic. These areas are the great workshops of the world. Their function seems to be not only to supply the needs of their own people but to export great varieties of goods, chiefly of machine manufacture, to other countries. They receive in payment mainly raw materials and partly finished commodities, which are worked into finished manufactures for both domestic and foreign trade. With growing industrializations, the capacity of domestic resources to supply varied raw materials has continually declined, with the result that dependence on the outside world has increased. In some instances this has been notably true with foodstuffs which must be imported in large quantities.

The effect of growing industrialization on the character of foreign trade is indicated by the commerce of the United States. In the years from 1866 to 1870, semi-finished and finished manufactures, including manufactured foodstuffs, were only 33 per cent of the total exports;

in the years from 1896 to 1900 they were 55 per cent of the total, and from 1926 to 1930 the annual average was about 69 per cent. On the other hand, imports of crude materials, crude foodstuffs, and semi-manufactures increased from about 38 per cent to 57 per cent, and then to 68 per cent in the periods just named. Thus, with more intense industrialization this country began to supply to the outside world larger quantities of finished goods, and to take from overseas regions more of the crude stuffs.

By way of contrast, the exports of non-industrialized countries is composed mainly of raw or partly finished materials. In 1931, about 71 per cent of the exports of Australia were of this description, about 78 per cent of those of the Union of South Africa, and more than 80 per cent of the exports of Egypt were in this class.

In order to establish purchasing power abroad countries which are mainly exporters of raw products frequently depend upon a few commodities in which nature has given them an unusual advantage in production. This was the case of the United States before the coming of industrialization. For example, in 1810, cotton constituted about 22 per cent of the total exports; it was about 32 per cent in 1820, 41 per cent in 1840, and over 57 per cent in 1860. At this time, we relied on foreign countries to supply many manufactures and various invisible services; the sale of cotton was an important factor in the discharge of the debts. Moreover, at that time, practically all the world needed our cotton.

Many countries at present depend chiefly on a few exports to pay foreign debts, however acquired. In 1931, coffee composed about 68 per cent of the total exports of Brazil, tin accounted for 79 per cent of the foreign shipments of Bolivia, copper and the nitrates about 83 per cent of the exports of Chile, and coffee about 61 per cent of those of Colombia. Shipments from Argentina were somewhat more diversified; but even there, wheat, corn, and linseed amounted to over half the value of the exports in 1931.

This is not to say that countries whose foreign trade is made up largely of raw materials are not the location of domestic manufactures. In most cases, some factory industries exist, but the purpose is to supply as much of the local trade as possible. Frequently such countries have adopted a protective system to defend infant industries. But these nations are prohibited, at least at present, from engaging in extensive manufacture for export because of lack of capital or diversified industrial organization, or of markets. Thus, export trading in varied

manufactures is in the hands of those nations which are equipped for the enterprise. In this respect, international commerce involves a kind of world division of labor in which the function of diversified manufacturing is reserved for a few countries, and all the others engaged mainly in the extractive industries.

Differences in National Wealth

However large or small the population, countries which have been organized for large scale industry have been able to accumulate wealth much more rapidly than those which exist on the raw material producing stage. In 1928, the national wealth of Belgium was one and one-half times greater than that of Mexico, although the latter country possesses vastly greater resources and has more than double the population of the little European nation. In the same year, the national wealth of the United States was more than four times that of all Latin America, although it is doubtful that such a great disparity would exist if these other parts of the world were more highly developed.

Great wealth usually signifies a large surplus for investment, whether at home or overseas. At any rate, the wealthy countries are those which contribute financial assistance to the promotion of industrial enterprise elsewhere. The export of capital, in whatever form, has become one of the great features of this age, but it is an activity in which only a few countries are engaged. The effect is to stimulate international trading. In many cases, exported capital takes the form of material goods, such as machinery, stocks of goods, railway equipment and supplies, and manufactures of various kinds which are destined for productive purposes. In this event, the lending is, to all intents and purposes, export. But the lending process is also involved in the intricate, and sometimes invisible, ways of financing the movement of goods, of paying for intangible services, and of developing various types of commercial facilities, all of which increase the opportunity for trade.

On the other hand, the borrowers are expected to pay interest and eventually to discharge the principal. In the absence of invisible credits, their main method is to export commodities. If the investments by foreigners have been of assistance in building productive industries, so much the better, because the borrowed sums reproduce the interest and ultimately the principal. Under these circumstances, investment abroad is not unlike the similar process at home, because in both instances the industries are expected to recreate the amounts that have been put into them. But with this difference; in foreign investment the

return takes the form of an export, whereas in domestic industry, if the enterprises are fortunate, it is only an addition to the national wealth.

In recent years, various indictments have been brought against wealthy nations; they have been charged with imperialistic purposes, with economic penetration, and with domination of the domestic affairs of borrowing countries, to name only a few of the charges. Without attempting a defense of investors' methods, the fact remains that their surplus wealth has created industries where they did not exist before; it has opened mines and plantations, built railroads, and supplied liquid funds to aid the movements of trade, and thereby it has led to a great expansion of international commerce.

Political Boundaries

Political boundaries are of course not coextensive with economic or geographical boundaries. Nevertheless, trade from country to country is set down as international commerce whereas, if the regions were comprehended under one government, the exchange would be merely domestic trade. Yet political boundaries play an important part in the industry of a people. Nations are inspired by a desire for a large measure of self-sufficiency; for this reason they adopt measures, largely uneconomic, to encourage local enterprise. Most of the smaller nations of Europe are stimulating such manufactures as iron and steel, electrical manufactures, the textiles, chemical, and others although the products of such enterprises could be obtained to greater advantage from other countries. These nations must import raw materials, and make payment with such commodities as will stand the pressure of international competition. There are some exceptions with those nations which have based a few leading manufactures upon some unusual natural resource. The encouragement of non-economic enterprises, however, is a practice of the richly endowed as well as the poorly endowed nations. For years, we in the United States have followed the policy of attempting to supply most of our wants from domestic enterprises, although in some instances, the import trade would have been a cheaper source.

Old Differences Tend to Be Neutralized but New Ones Appear

Commerce is involved primarily with the exchange of goods, but an incidental effect is the broadcasting of ideas and of enterprise. Manufacturing countries export vast quantities of machinery which are to be

used by importers to set up industries which compete with those of the exporters. This is true of textile, shoemaking, flour-milling, and other types of machinery. Industrialists in some larger countries found factories outside their own borders to produce the identical commodities which are turned out by their home enterprises, such as automobiles, various corn products, copper, and petroleum. Capitalists supply funds to build railroads in countries which are primarily agricultural to open land for the production of cereals when, in some cases, their own country is a large producer of the same commodities. In this manner competitive advantages are being constantly neutralized.

Nor is this all. The process of transfer of crops from one region in the world to others has been going on for many years. Arabia was the earliest source of coffee sent to Europe; hence the name Mocha, which was once famous in the trade. About 1690, the seed was carried to Java where both soil and climate were admirably adapted to the cultivation of the coffee plant. About 1718, the Dutch brought the seed to Surinam, and from this place cultivation spread to the Latin American countries and eventually to Brazil. The outcome of this development has been to upset many old lines of trade.

Tobacco is one of the few American contributions to the world's industrial plants. Although the qualities change somewhat in new surroundings, tobacco readily adjusts itself to different growing conditions. For this reason it may be produced in many parts of the world. In 1926, it was grown in at least eighteen states in the United States, to say nothing of Canada, Cuba, and Mexico; six European countries reported production, and the plant was grown rather extensively in South America, Asia, and Africa.

Various spices, which were once the object of the Oriental trade, have now been distributed widely over the earth. Our own Department of Agriculture has been active in adapting many soil products to conditions in the United States, and several places in the world are producing cotton from seed obtained from this country. All modern nations are eager to diversify products of fields and forests. To this end they experiment with plant life developed originally in distant areas. Many of these experiments succeed, and in this manner the opportunities for trade are modified to a marked degree.

Substitutes have a similar effect on trade. As early as 1747 Andreas Marggraf began to experiment with the production of sugar from beetroots. At this time, cane supplied about all the world's needs. But conditions changed. The Napoleonic wars, which disrupted European

commerce, curtailed the European supply of many substances, sugar included, with the result that producers began to give attention to other sources. In 1840, only 4 per cent of the world's sugar was produced from beets, but it was about 20 per cent in 1860. Since that time a number of countries have undertaken to supply home consumption from this source. It is needless to say that this process of substitution diminishes the opportunities for trade with the regions producing cane sugar. Some of the recent industrial troubles of Cuba and Java may be traced to this source.

The development, notably since 1900, of artificial fibers, has exerted a notable effect on the commerce of certain natural products, such as silk and wool, and to some extent of cotton. We, in the United States, have been carrying on experiments for the production of rubber from certain shrubs. A synthetic rubber industry, large enough to supply the needs of automobile users, is not beyond the realm of possibility. The production of aniline dyes and of synthetic perfumes and drugs has exerted a profound influence upon the trade in the natural products, and, of course, upon the manufactures which have used these raw materials. Commerce is by no means a static affair. It is affected by original natural conditions. It is influenced, also, by changes which man makes in transplanting industries from one place to another, and by the introduction of substitute crops and even of substitute manufactures. Inventions and discoveries are just as effective in diverting the course of commerce as giving new direction to manufacturing enterprises. Change is the order of the day, and every kind of industrial activity exists on tolerance—until something else appears which achieves the purpose more effectively. The differences upon which the exchange of goods is based are sometimes a matter of original advantages stored in resources, and sometimes in labor and capital costs.

The character of management also plays a part in the creation of advantages. For one reason or another some directors are able to get better results than others, and no nation has a monopoly of this type of talent. But wherever it exists, it creates competitive factors which exert an influence on trade.

International Interdependence

Whatever the equalizing forces, the industrial differences never disappear. Dependence of one region on others grows with the development of trade and industry. When modes of living were rela-

tively simple, as they were in the days of the American backwoods-men, communities could live almost entirely without commerce with other regions. Even now one can find little settlements in the mountain areas of the United States where people live largely on their own productions. But such communities, at least in the United States, are the exception rather than the rule.

Even primitive man was dependent to some extent upon the efforts of his fellow man. In early times there was some trading among the tribes, and not a little piracy and theft, to obtain desirable goods. Commerce of some description antedates the dawn of history. Thus says Professor Clive Day: "The origins of commerce are lost in obscurity. Before people are sufficiently civilized to leave written records of their doings they engage in trade; we can observe this among savage tribes at the present day, and we know that it held true of the past, from finding among the traces of primitive man ornaments and weapons far from the places where they were made."²

Modern conditions have greatly increased the dependence of region upon region, and of nation upon nation. The complex system of modern production makes necessary a kind of division of labor in which different regions produce the things in which they have an advantage and exchange with other regions which are working on the same principle. This advantage may lie in the abundance of certain physical resources, or in traditional artistic talent, or in mere manual dexterity: sometimes it lies in the possession of wealth, and in the financial and industrial organization which such possessions makes possible.

With the evolution of industry, its demands upon men and nature become exacting. Skill is highly specialized; materials must suit the precise needs of the manufacturer. The properties of steel, for example, must be adapted to the uses to which steel is put. The composition of a razor blade is different from that of the structural beam, and this in turn differs from the quality of the steel in the surgical instrument, in the armor plates of the battleships, and in stainless steel, to name only a few kinds. Some forms of finished metal require rather rare elements, and these are seldom found in regions which manufacture steel. In fact, they are scattered over the earth, sometimes in most remote places. Producers, therefore, must scour the world for materials which suit the specific needs of industries. This statement applies to many kinds of manufactures. Thus, with the growing complexity of organization,

² *A History of Commerce* (Revised) (Longmans, Green and Co., New York, 1926), p. 9.

with more exacting demands for materials, the industries of the nation are much more dependent on supplies from the outside world than in former years.

Hundreds of illustrations might be given. We might take one from the telephone service. Some twenty or more necessary substances are brought from as many parts of the earth—rubber from Malaya, silk from Japan, long staple cotton from Egypt, wool from Argentina, Australia and the western part of the United States, nickel from Canada, platinum from Colombia, mica from Madagascar, antimony from China, tin from Bolivia and the Straits Settlements, asphaltum from Trinidad, and so on. Nearly every important section of the earth is represented.³ Automobile makers, textile manufacturers, leather producers, could tell a similar story.

In some instances, one raw material may be a critical element in the success of an industry, and this key commodity may be the product of some distant country. "We tremble to think what would happen to the automobile industry if producers were denied the supply of rubber, which is now obtained largely from Malaya, and to some extent from Brazil. Nickel, tungsten, vanadium, the platinum metals, dyestuffs, and many others, are necessary for the economical conduct of certain industries. These are only illustrations of the diversified needs of manufactures. Thus, as industry develops, the world becomes the source of its varied raw materials, and on the other hand, the world is the market for finished products."⁴ Those who talk of national self-sufficiency have not measured the importance of their words.

Restrictions on Commerce

We shall discuss the question of trade restrictions in another part of this volume. But we might say in this place that practically all nations try to offset natural, or human, advantages possessed by others by some kind of restriction. Arrant nationalism has been more and more the order of the day since the close of the late war. In pursuit of this policy the nations have been moved by the desire to conserve limited domestic markets for home merchants and manufacturers, to develop industries which might add to the employment of domestic labor, and to obtain as much foreign trade as is possible under the circumstances. Thus, they have sometimes put imports on a quota basis, manipulated

³ Lippincott, *Economic Development of the United States* (3rd ed.) (D. Appleton and Company, New York, 1933), p. 612.

⁴ Lippincott, *Economic Resources and Industries of the World* (D. Appleton and Company, New York, 1929), pp. 18, 19.

the rates of foreign exchange, depreciated their currencies, and increased import duties. The best that can be said for these measures is that they may yield a temporary protective advantage and they may be necessary as instruments of commercial warfare as long as other nations engage in the same practices. But they work great hardships on international commerce and eventually redound to the disadvantage of all nations.

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PART II

TRADE OF THE POLITICAL DIVISIONS

CHAPTER IV

EXPORT TRADE OF THE UNITED STATES

Before taking up a study of the trade of the United States, it might be helpful to make a preliminary examination of the status of world commerce and to ascertain the position of this country as a world trader. In 1929 the commerce of the world reached the highest point in history with a total value of \$68,124,200,000.¹ These figures refer only to the trade which passed international borders. In addition, the commerce which moves within the countries is of vaster proportions than that which is carried on among nations. In the United States, for example, in 1929, the domestic trade, as measured in wholesale and retail sales, was about thirteen times as great as our total foreign trade—imports and exports combined. It is impossible to say whether this same ratio holds among other nations, but there is no question that the total domestic commerce of the nations is vastly greater than the trade that moves across all their borders. The latter, as far as exports are concerned, is made up chiefly of those goods which can be sold more advantageously abroad than at home; and with respect to imports, the trade includes the products of other regions which differ in one way or another from those produced within the country. But, at that, home industry is the chief reliance of the peoples of all nations.

Value versus Volume

It is necessary to distinguish between the value of foreign trade and its volume. During the years from 1929 to 1934, world trade was affected by unusual conditions. Not only were the devastating effects of the depression world-wide but unusual measures were adopted by every country as a protection against outside influences, and, at the same time, as a means of keeping a grip on as much foreign trade as possible. While many nations added a number of layers to the tariff walls, at the same time they struggled for a larger share in the oversea commerce. This was done by various methods, as we saw at the conclusion of the last chapter. The effect was to moderate the decline in

¹ *Commerce Year Book*, Vol. II, 1932 (U. S. Department of Commerce), p. 720.

volume at the expense of price or other factors. Thus, "the shrinkage in volume was considerably less, about 18 or 19 per cent, as world trade prices in 1931 averaged approximately 11 per cent below the level of 1930."²

But this decrease was by no means uniform over the world. It was affected not only by trade regulations, but by the debtor or creditor status of the countries. "In the so-called debtor countries imports declined, as a rule, much more sharply than exports, while the reverse was the case in creditor countries. The imports of Oceania and South America declined 53 and 44.7 per cent, respectively, while the exports of these two continents decreased only 26.3 and 23.4 per cent."³

The value of trade is a rather imperfect measure of the amount of business activity performed either within a country or in international commerce. Given relatively stable conditions, it is possible to carry on a large volume of transactions whether on a low or a high price level. But prices, whether at home or in foreign trade, affect commerce in another way. For many articles, low prices stimulate buying. In world trade, merchants shop around to make their purchases in low price places. They would do this to an even greater extent if international trade were unrestricted. But, at that, they usually buy their raw materials where they can get them cheapest; world trade in raw products is less restricted than in manufactured goods. Whether a larger total value results from this price consideration depends upon the effect of lower price in stimulating sales. But, at any rate, experience has shown that we should not look too closely to total values as an index of the industrial activity either of countries, or of regions within nations.

Trade by Grand Divisions

Europe, taken as a whole, is the most important international trade area in the world. In 1931, the foreign trade of approximately thirty countries, which compose this division, amounted to 61.5 per cent of the total world imports, and 54 per cent of the exports. Notwithstanding the growing importance of the United States, during the past thirty years, as a competitor in the international markets, the relative position of Europe has changed very little. Not only has the trade among these nations increased, but their purchases and sales to the other grand divisions have grown. The table given below summarizes the percentage share in the commerce of the world by the various continents.⁴

² *Commerce Year Book*, Vol. II, 1932, p. 718.

³ *Ibid.*, p. 718.

⁴ *Ibid.*, p. 724.

INTERNATIONAL TRADE: PER CENT OF WORLD TOTAL IMPORTS AND EXPORTS,
BY CONTINENTS (108 countries)

CONTINENTS	1911-1913	1929	1931
IMPORTS			
North America	13.0	18.5	15.3
South America	5.1	5.3	3.6
Europe	66.4	55.6	61.5
Asia	9.8	13.4	12.9
Oceania	2.3	2.7	1.5
Africa	3.4	4.5	5.2
EXPORTS			
North America	16.7	22.7	19.5
South America	6.0	6.8	6.1
Europe	60.7	49.0	54.0
Asia	11.1	15.0	13.9
Oceania	2.4	2.7	2.6
Africa	3.1	3.8	3.9

It is evident from this table that in 1931 North America was the second most important international trade area, and Asia third. Here, as in many other similar instances, we are confronted by the limitations of comparisons. Due to the fictions of national boundaries, much that is counted as international trade in Europe would be considered domestic trade in the United States, due to the fact that we have such a large area under one dominion.

Figures, such as those given in the table above, therefore, are not an adequate representation of the amount of business activity in the various areas, nor of the volume of domestic trade, whether within national borders or in the grand divisions as a whole. A similar remark applies to the value of the commerce of these regions, given in the table on page 52.⁵

The Growth of International Commerce

The expansion of both the foreign and the domestic trade of the nations during the past forty years exceeds by far the records of any epoch in history. But this development has been unequally distributed. One of the most significant features has been the advance in the relative position of the United States. The year 1880 approximately marks

⁵ *Commerce Year Book*, Vol. II, 1932, p. 720.

MODERN WORLD TRADE

INTERNATIONAL TRADE: IMPORTS AND EXPORTS

	1911-1913	1929	1931
IMPORTS			
North America	\$ 2,328,900,000	\$ 5,736,300,000	\$ 2,735,200,000
South America	1,033,400,000	1,883,000,000	749,700,000
Europe	13,597,200,000	19,699,000,000	12,733,500,000
Asia	2,014,100,000	4,737,500,000	2,665,000,000
Oceania	464,500,000	958,400,000	319,500,000
Africa	684,800,000	1,597,500,000	1,084,900,000
All Others	342,100,000	824,900,000	433,900,000
TOTAL IMPORTS .	\$20,465,000,000	\$35,436,600,000	\$20,721,700,000
EXPORTS			
North America	\$ 2,741,500,000	\$ 6,494,100,000	\$ 3,061,600,000
South America	1,137,100,000	2,236,600,000	1,143,300,000
Europe	11,486,500,000	16,008,900,000	10,084,800,000
Asia	2,106,600,000	4,914,700,000	2,594,800,000
Oceania	444,300,000	880,900,000	475,700,000
Africa	590,200,000	1,234,500,000	735,300,000
All Others	421,700,000	917,900,000	579,700,000
TOTAL EXPORTS . .	\$18,927,900,000	\$32,687,600,000	\$18,675,200,000

the coming of the new industrialization in this country, and the year 1897, approximately, as the appearance of this country as a large scale exporter. Since that time our exports have grown more rapidly than those of any other country. In 1931 they constituted 13 per cent of the world total, as compared with 12.2 per cent for Germany and 11.1 per cent for the United Kingdom.

In a measure our export position is due to the growing need of certain parts of the world for our raw materials, but since 1897, in particular, we have become an important factor in the supply of manufactured goods. The output of American industries has not only increased enormously since 1880, but there has been added to the list of manufactured goods a vast variety of commodities, many of them peculiar to the inventive genius of the United States. These, along with many staple articles, now enter into the export trade.

As an illustration of the growing capacity of the United States for the production of fabricated articles we may indicate that the total capital devoted to factory production in 1880 was about \$2,800,000,000,

in 1910, about \$18,400,000,000 and in 1930, about \$55,400,000,000. Over this period the total value of the manufactured products expanded from about \$5,300,000,000 to about \$70,000,000,000.⁶

This industrial growth not only added a vast quantity of goods to the domestic market, but an ever increasing surplus which sought markets beyond our borders. The export included not only staple product, but a long line of specialties which were more or less peculiar to our production system. In addition, this country became the source of supply for many kinds of machinery for use in general industries, including electrical machinery and appliances, agricultural implements, and textile and sewing devices.

The export position of the United States is also due to the growing needs of certain of the industrialized parts of the world for our raw materials. Such exports include large quantities of cotton, wheat, pork and its products, tobacco and its manufactures, petroleum, lead, zinc and copper. On the other hand, with the expansion of industries in this country, it has become necessary to tap sources of raw products in many parts of the earth. We are large importers of rubber, tin, coffee, wool, silk, sugar, and we bring in sizeable quantities of copper, iron ore, petroleum, and cotton, among others, although we are large producers of these substances. To this should be added as imports a considerable list of rarer metallic elements and many kinds of manufactures. The growing diversity of American industries has made necessary a world-wide quest for the materials which satisfy industrial needs.

While the export commerce is of much less importance than domestic trade, it renders certain important functions, without which the country would be poorer; it removes a part of the huge surpluses of American fields, mines and factories, it supplies from abroad many goods which cannot be produced under the best advantages within our borders, and it increases to a marked degree the employment opportunities within the country since great amounts of labor are required to produce goods for export.

Growth of the Export Trade

From the beginning of our history the North American continent has been able to supply a great variety of goods which were needed elsewhere. In early times, if Britain had been able to follow her way, the

⁶ Lippincott, *Economic Development of the United States*, 3rd ed. (D. Appleton and Company, New York, 1933), p. 423.

colonial establishments would have been asked to produce various commodities which England was importing from countries outside her dominions, such as silk, wines, spices, quinine and olives, among others. Experiments were conducted in American production of such things, but greater profit in other kinds of activities drew attention away from commodities which the home country hoped might be produced in America. In the southern colonies the success of tobacco, indigo and rice, and in the northern region fishing, lumbering, and general trading supplied a more immediate opportunity for income than the production of goods of doubtful prospects.

Newly settled regions labor under peculiar difficulties. There are certain commodities which they must buy abroad, and on the other hand, they have difficulties in finding means of payment. Moreover, they have few invisible items of trade, as we understand that term to-day, and for this reason their imports must be paid for largely with their exports. In addition, newer regions sometimes have exceptional advantages in producing certain raw materials. Wealth from field, forests, or waters lies at their door, and the advisable procedure is to work with what nature has offered in greatest abundance. These influences were dominant in the early days of foreign trading in America. Thus the leading exports were tobacco, furs, fish, lumber, rice, indigo, naval stores, and from some regions, limited quantities of cereals and flour.

In 1775, Virginia, Maryland and the Carolinas shipped about 70 per cent of the commodities delivered abroad. This indicates that tobacco, rice, and indigo were the principal exports. After the invention of the cotton gin, cotton rose to the preëminent place amounting to a little over 57 per cent in 1860. That the United States relied largely on her prolific natural surroundings as a basis for her export trade is revealed by the fact that during the years from 1790 to 1860 the shipments

EXPORT TRADE: PER CENT OF CERTAIN CLASSES OF COMMODITIES:
1821-1860 ⁷

YEAR	CRUDE MATERIALS	CRUDE FOODSTUFFS	MANUFACTURED FOODSTUFFS	SEMI- MANUFACTURES	FINISHED MANUFACTURES
1821 ..	60.62	4.79	19.51	9.42	5.66
1830 ..	62.65	4.65	16.32	7.04	9.34
1840 ..	67.83	4.09	14.27	4.34	9.47
1850 ..	62.36	5.59	14.84	4.49	12.72
1860 ..	61.67	6.61	15.39	4.01	12.32

⁷ *Statistical Abstract of the United States*, 1931, p. 437.

of crude materials were from 60 to 65 per cent of the total. The position of various classes of commodities in the export trade is shown in the table on page 54.

It is apparent from this table that the country depended chiefly upon raw materials to meet the needs of its export business. Although manufactures were expanding, the output of fields and forests was growing still more rapidly. The country could produce of such goods much more than could be consumed at home, and a foreign market was needed to absorb the surplus.

At this time the western countries of Europe were by far the largest consumers of American goods. England, France, and the Hanse Towns, imported most of our surplus cotton; tobacco was shipped chiefly to these countries. Flour was distributed to many areas, but the chief importers were England, France, and British, French, and Dutch West Indies, Cuba, and Brazil. Lumber was also widely distributed, but Cuba and the British and French American possessions were the chief importers. Whale oil was shipped mainly to Holland and the Hanse Towns, whale bones to France, Holland and the Hanse Towns, soap, tallow and spermaceti candles, skins and furs, naval stores, lard, hams, and bacon to many countries.

In spite of the hopes of many American merchants the export trade to Asiatic countries was of little significance. Several areas took a miscellaneous assortment of commodities, but in each instance the amounts were small, and the aggregate was only a small percentage of the value of such commodities shipped to Europe. On the other hand, Cuba and the West Indies imported sizeable amounts of American products, including fish, tallow candles, timber products, flour, rice, tobacco, and pork products. Of the South American countries, Brazil was the largest importer. The distribution of our export trade is shown in the table on page 56.

The waning percentage of the other American countries should not be taken to indicate that the total value of their imports from the United States was declining. The reverse was the case. Our exports to South America increased steadily from about \$2,208,000 in 1821 to \$15,706,000 in 1860, and to the southern part of North America from \$11,965,000 at the former date to \$29,273,000 at the latter. But the exports to Europe were of much greater value. They increased from about \$35,500,000 in 1821 to \$249,400,000 in 1860.

If the Latin-American areas compared unfavorably with those of western Europe, it was due to the low state of their industrial de-

DISTRIBUTION OF AMERICAN EXPORT TRADE: 1821-1860 ⁸
PERCENTAGE TO GIVEN AREAS

YEAR	NORTH AMERICA		SOUTH AMERICA	EUROPE	ASIA	OCEANIA	AFRICA
	NORTHERN	SOUTHERN					
1821 ...	4.4	22.0	4.1	65.3	3.6	0.1	0.6
1830 ...	3.9	20.5	6.4	66.1	2.7	0.1	0.3
1840 ...	4.9	13.9	4.6	74.4	1.3	0.3	0.6
1850 ..	6.6	9.9	5.4	75.2	2.1	0.1	0.7
1860 ...	6.9	8.8	4.7	74.8	2.4	1.5	1.0

velopment. In 1820 many South American countries were just emerging from a colonial status, and were looking forward to existence as free governments. They were beset by years of political uncertainty and revolutions. The little communities within the new nations were largely self-sustaining, with little or no internal communications, with a very few commodities for external trade and with only a mediocre capacity for purchase abroad. The great changes which brought into being modern commercial development in this continent did not begin until after 1870 with the establishment of stronger governments, with foreign capital filtering in more and more to build railroads, improve harbors, and open mines and plantations. Thus the account of the great commercial expansion of this area belongs to more recent years.

With the exception of a brief period—within the years from 1816 to 1833—the American attitude was favorable to foreign trade expansion. For a time, the new manufacturers looked with some concern upon the competition of foreigners within the domestic markets, and the tariff acts from 1816 to 1828 were designed to curb this competition. But a more liberal attitude began to prevail after that date. By the terms of the Act of 1833 the rates were gradually reduced. After a brief reversal of policy in 1842 the country once more adopted freer trade ideas, notably with the tariff acts of 1846 and 1857. In fact, in the latter part of this period at least, there was a tendency to overestimate the value of foreign trade as compared with domestic commerce.

The expansion of the home market seemed to have been taken for granted. Many factors in our local conditions confirmed this point of view. The country was being opened rapidly by roads, canals, and subsequently, by railroads. Great volumes of commodities began to move over these new channels, including the Great Lakes and interior rivers. Considerable quantities of goods were destined for export. Thus

⁸ *Statistical Abstract of the United States*, 1931, p. 443.

the Mid-west, along with the seaboard areas, was obtaining an advantage from trading abroad.

For some years, after 1810, merchants and shipbuilders as far inland as Pittsburgh found a rather profitable business in building vessels along the banks of the upper Ohio, loading these crafts with local products and sending vessel and cargo to some external market. Merchants of Marietta, Ohio, were said to have been the first "who conceived the idea of exporting the products of the country directly to the Antilles by a vessel constructed in their own town, which they sent to Jamaica. The success which crowned this first attempt produced such an emulation among the inhabitants of this part of the western country, that new vessels were launched at Pittsburgh and Louisville and sent immediately to the West Indies, or to New York and Philadelphia."⁹ It was not expected that these vessels would return up-river, but that they would be sold eventually either to foreign shippers or to ship owners along the Atlantic. Meanwhile, the boat served the purpose of carrying a cargo of domestic products.

This was an era when many new industrial establishments were founded. In the North, the opening of the Erie canal in 1825 developed a vast hinterland extending as far west as Chicago. Various commodities from this area sought a foreign market by way of New York, and the new country was supplied with many foreign goods transported inland over Erie canal and Great Lakes. All in all, various domestic developments favored the expansion of foreign commerce.

In former years, the heavy, bulky articles of the seaboard states reached the export cities chiefly over the rivers which flowed into the Atlantic. This was notably the case with cotton and tobacco. With the movement of plantations into the interior, some of the tributaries which fed the Mississippi carried their cargoes to that stream, eventually to be delivered in New Orleans by steamboat. For some years, this city ranked second to New York as an export market, with cotton as the chief commodity which entered foreign trade. Considerable shipments were made also from Charleston and Mobile.

The average annual shipments of cotton from New Orleans were about 206,000 bales during the years from 1822 to 1830; they were about 553,000 bales during the next decade, about 952,000 bales for the decade ending with 1850, and 1,579,000 bales for that ending 1860. Some of this cotton was shipped to northern seaboard markets for consumption in the United States, but large quantities were exported

⁹ Lippincott, *op. cit.*, p. 262.

overseas. New Orleans not only received more cotton than any other city in the United States but at times, after 1840, more than all other places combined. Since cotton exported from New Orleans came from up-river, it is evident that the cotton trade was a large factor in the commercial relations of that city with the interior. In fact, out of a total import into New Orleans from the interior, estimated at \$185,211,000 for 1860, cotton contributed about \$109,389,000.¹⁰

Total Exports: 1821-1860

Considering the United States as a whole, finished manufactures, except for fabricated foodstuffs, were only a small part of the exports during this period. In 1821 they amounted to only 5.66 per cent of the total, and as an average, for the decade ending with 1860, to only 12.3 per cent. Perhaps the most significant factor was the steady increase in such products which entered external commerce; this indicated, indirectly, at least, the ability of the country to convert ever increasing quantities of its own raw materials into manufactures. Yet, at best, the process of fabrication was simple, requiring relatively elementary methods of production, and the finished goods themselves were not far removed from the raw material stages.

The more important of these exported items were manufactured tobacco, certain products of iron, turpentine, cotton piece goods, furniture, carriages and parts, wearing apparel, candles, leather, boots and shoes, books, maps and paper. The list included, also, a considerable number of items no one of which exceeded \$200,000 as a total.¹¹ The exports for given years are presented in the table.

EXPORTS FROM THE UNITED STATES: 1821-1860¹²

YEAR	AMOUNT	YEAR	AMOUNT
1821	\$ 51,684,000	1850	\$134,900,000
1830	58,525,000	1851-1860	232,149,000 ¹³
1840	111,661,000		

During the earlier years of this period the greater part of our foreign commerce was carried in American vessels. The abundance of suitable timber, the skill acquired by ship-builders over the past hundred years or more, and the occasional needs of such events as European wars, had

¹⁰ Lippincott, *op. cit.*, p. 188.

¹¹ *Commerce and Navigation of the United States for the year 1860*, p. 55.

¹² *Statistical Abstract*, 1931, p. 438.

¹³ Annual Average.

acted as a stimulus to ship-building and operation. But with the coming of the iron vessel, notably with those propelled by steam-power, the advantages passed to some of the European countries, particularly Great Britain. The result was a decline in the relative significance of American trans-Atlantic tonnage. In 1830, upwards of 89 per cent of the water-borne exports and imports were carried in American vessels. The amount was only 66.5 per cent in 1860.¹⁴ As we shall see presently, the export business in American ships declined to small proportions in the years from 1860 to 1917.

*Significant Changes Affecting the Development of Export Trade:
1860-1935*

First we must consider the expansion of transportation facilities, for such developments are among the means of reducing the cost of distribution, making possible a more extensive marketing of all manner of commodities and the expanding of markets.

Both with respect to inland and ocean transportation, the developments were remarkable. Steam-power had been applied to inland transportation in England as early as 1825 and in America with the inauguration of the Baltimore and Ohio railroad, shortly after 1828. The steamboat was first used on American rivers in 1807 with the voyage of Fulton's boat, the "Clermont," up the Hudson to Albany; and in 1811-1812 steam navigation was begun on the Ohio and Mississippi rivers, although only in an experimental way. In 1819, the "Savannah," making use partly of sail and partly of steam, crossed the Atlantic, and in 1838 the first regular line of steamers between the United States and Europe was established. These were epoch-making developments in the history of commerce, whether inland or ocean.

The building of railroads in the United States was primarily of importance in the opening of domestic markets. But the effect was felt, also, in foreign trade. Eventually, vast quantities of crude and semi-manufactured materials were moved to the ports for foreign sale, and great quantities of domestic materials entered the manufacture of many kinds of goods which were shipped to all parts of the world. The source of many of these materials was the far inland of the United States—regions which had no contact with foreign markets until the development of transportation.

The beginning of the railroad era in this country, at least in the modern sense, was in 1828, when Charles Carroll of Carrollton, Mary-

¹⁴ In value.

land, the last surviving signer of the Declaration of Independence, laid the corner stone for the Baltimore and Ohio.

The seaboard cities saw unlimited opportunities in the new system of transportation. Railroad building had become the order of the day, and Boston, Charleston, New York, Philadelphia, and New Orleans, some of which had formerly been excluded from the race for extensive contacts with the interior, began to evolve plans to obtain an increasing share of the trade. Illustrating the new spirit which dominated the enterprise, a western newspaper said in 1837: "Every city on the coast has its plans, and the states to which they belong have pledged gigantic means, stretching far beyond the wealth of former days."¹⁵ These plans included, first, the tapping of the area tributary to the Great Lakes and the Ohio river; second, the commerce of the Mississippi and its tributaries; and finally, the extending of the trade conquest to the Rocky Mountains and to the Pacific Ocean. These projects had been so far successful by 1860 that roads had been built radiating from Lakes Erie and Michigan touching the Mississippi at ten places and the Ohio at eight.

The first transcontinental railroad was completed in 1869. The building of railroads into the Middle and Far West opened vast resources of forests, fields, and mines and laid the basis for the enlargement not only of domestic commerce, but of foreign trade. How rapidly railroads were built in this country is shown by the fact that the mileage increased from about 30,600 miles in 1860 to about 250,000 miles in 1934.¹⁶

World Commercial Facilities

Meanwhile, the improvements in transportation in many parts of the world contributed to a great development of foreign trading elsewhere, as well as to the expansion of domestic industries. The total railway mileage of the world in 1934 was estimated at 750,000 miles; it was only 67,400 in 1860. The telegraph wire mileage throughout the world in 1934 was about 7,119,000, but it was only 100,000 in 1860. No telephone service at all was in existence in 1860, but the wire mileage in 1934 was estimated at 140,000,000. Ocean cables were expanded rapidly from about 1,500 miles in 1860 to over 330,000 miles in 1913. Finally, the facilities for carrying ocean freight were extended from about 16,600,000 tons in 1860 to more than 70,130,000 tons in 1934. These

¹⁵ Lippincott, *op. cit.*, p. 250.

¹⁶ This is for "miles of road (first track owned)." In addition, the yard track and sidings, and other main tracks, bring the total to about 430,000 miles.

services were of advantage to world commerce in general, but America received the benefits along with the others.

The completion of the Suez canal in 1869 and of the Panama canal in 1914 reduced the distance of ocean freighting over many routes and produced many other beneficial results such as savings in ocean tonnage, economy in stocks of merchants in distant parts of the world, and reductions of expense in carrying on international trade. Meanwhile, particularly after 1880, there came a great era of foreign investments, with Britain, France, Holland, and subsequently, the United States and Germany making large expenditures for opening of resources in other countries, and in improving the facilities for commerce. In many instances, these investments opened new lands which would have remained dormant for many years. Their products were now supplied to international commerce, with the resulting expansion of trade not only in raw materials but also in finished products.

REFERENCES

For references see the end of Chapter V, page 75.

CHAPTER V

EXPORT TRADE OF THE UNITED STATES (*continued*)

What we have said hitherto refers mainly to the course of American export trade prior to 1860. The purpose of the present chapter is to study the expansion since that date.

Changes in the Character of American Exports

Prior to 1860, raw materials and partly finished manufactures dominated our export trade. This situation has changed to a marked degree. The year 1898 has been called the beginning of "American invasion of foreign markets." However this may be, finished manufactures which entered the export trade gained only about 9 per cent in the years from 1851-1860 to 1896-1900; but from the latter period to the years from 1926-1930 the gain was about 24.02 per cent. This is shown in more detail in the table below:

PERCENTAGE DISTRIBUTION OF EXPORTS BY PERIODS¹
1866-1930

YEAR AVERAGE	CRUDE				
	CRUDE MATERIALS	FOOD- STUFFS	MANUFACTURED FOODSTUFFS	SEMI- MANUFACTURES	FINISHED MANUFACTURES
1866-1870 ...	57.62	9.05	13.75	4.68	14.89
1896-1900 ...	26.11	18.90	24.01	9.64	21.33
1901-1905 ...	30.27	12.19	22.16	11.30	24.07
1906-1910 ...	31.68	8.90	18.12	14.23	27.07
1911-1915 ...	30.74	8.83	14.32	15.41	30.70
1916-1920 ..	18.22	9.16	17.66	15.39	39.58
1921-1925 ...	27.54	9.74	13.93	12.45	36.33
1926-1930 ...	24.40	6.40	9.72	14.14	45.35

In the last named period finished manufactures constituted about 45.35 per cent of the total exports. These figures are exclusive of manufactured foodstuffs and of semi-manufactures. On the other hand, the

¹ *Statistical Abstract of the United States, 1932* (U. S. Dept. of Commerce), p. 437.

export of crude materials declined from about 57 per cent of the total to about 24 per cent of the total.

These figures do not tell the whole story of the "foreign invasion." The foreign trade in manufactures included not only a wide range of products but many new commodities which were not in existence in 1860. This commerce was a counterpart of domestic industrial expansion which had been characterized not only by enormous growth but by the appearance of many new industries. It signified that American producers had begun to supply to foreign trade on a large scale the commodities which were more and more available to domestic consumers. In many instances, these were specialties which had been developed under home conditions to supply primarily the home market. Thus, whereas American producers have increased their struggle for foreign markets in staple articles, such as steel, textiles, and various food products, they have been supplying increasing quantities of commodities which are peculiar to the American system of production or to the nature of our resources.

Export of Machinery

A notable characteristic of the American foreign business has been the growing export of machinery. Such shipments were of little or no importance in 1865, amounting in value to only \$7,222,000. In 1929 they were 11.8 per cent of our total shipments, amounting to \$608,887,000.² The list includes, of course, agricultural machinery and appliances which we have been supplying to foreign markets for many years—such equipment as harvesters, mowers, reapers, threshers, feed cutters; some of the newer devices, such as combination harvesters and threshers; cream separators and other dairy machinery; hay presses, drills and seeders, sprayers and dusters, not to mention them all.

Included in the machinery exports are, also, a long list of electrical devices which were not among our manufactures in 1860. In addition to standard equipment are many articles which are more or less peculiar to American consumption, such as the electrical appliances used in the household, vacuum cleaners, fans, electric flatirons, refrigerators, electro-mechanical health exercisers, and many others. There is a long list of industrial mechanisms, including such classes of equipment as mining machinery, power-driven metal-working devices, textile machinery and office appliances, among others. In short, the machine industries of the United States have not only supplied local needs but

² *Loc. cit.*, p. 467.

have made large contributions to the development of industries elsewhere. In fact, in many instances, the machinery supplied to the outside world aids in the development of industries which yield products which compete with our own foreign sales.

If we classify the automobile as a machine, we shall have to add another \$539,200,000 to this group of exports for the year 1929. This industry made its appearance in the United States shortly before 1900. Exports were of little importance until after 1910. In fact, in that year, the value of vehicles shipped abroad was only \$11,190,000. But the amount rose rapidly after that date. It first crossed the hundred million mark in 1916,³ reaching the highest point in 1929.

The coming of the automobile contributed both directly and indirectly to other classes of exports, such as petroleum and its products (valued at \$561,100,000 in 1929), various kinds of electrical machinery and supplies, copper, lead, and zinc, various kinds of woods, and certain classes of iron and steel.

To a large extent it might be said that the American export trade in manufactured goods is a creation of new products which have made an appearance since 1860. This would apply to a long list of chemicals, to products of the non-ferrous metals, and to certain types of food products. Among the older industries, iron and steel, textiles, and lumber and its manufactures have supplied important groups of exportable commodities.

The Food-product Group

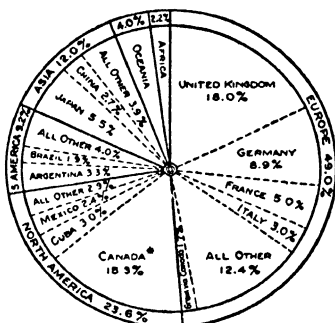
The food-product group constitutes another great division of our exports, but possibly one of declining significance due partly to rising competition from other parts of the world such as Canada, Argentina, Australia and New Zealand, and partly to the efforts of various European countries to bring local supplies as near as possible to the needs of home consumption. The latter development may be only a passing phenomenon, but competition from other countries is of more enduring nature. None of these newer areas has reached its capacity for export, and in each case the home population is relatively small; hence the need for foreign markets for the great surpluses is imperative. These conditions have acted upon the foreign trade in American foodstuffs, particularly since 1920.

Of the edible animal products the most important exports are pork

³ *Loc. cit.*, p. 467.

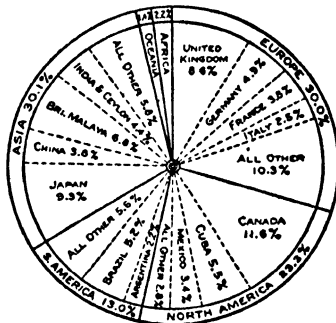
PERCENTAGE DISTRIBUTION OF THE UNITED STATES FOREIGN TRADE
BY CONTINENTS AND MAJOR COUNTRIES, 1926-1928 AVERAGE.

EXPORTS



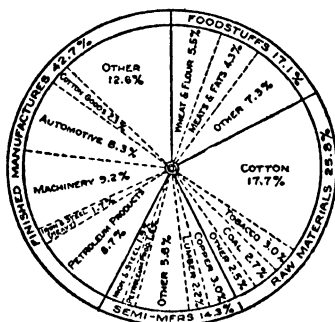
* Excluding grain exports reported as to Canada but actually in transit for Europe as shown.

IMPORTS

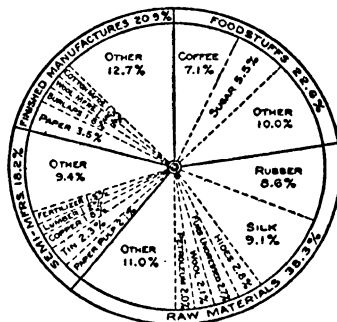


PERCENTAGE DISTRIBUTION OF THE UNITED STATES FOREIGN TRADE
BY ECONOMIC CLASSES AND MAJOR COMMODITIES, 1926-1928 AVERAGE.

EXPORTS



IMPORTS



(U.S. DEPT. OF COMMERCE)

Bureau of Foreign and Domestic Commerce

FIG. 6. PERCENTAGE DIAGRAMS SHOWING DISTRIBUTION OF UNITED STATES TRADE BY COMMODITIES AND COUNTRIES

and its related commodities, fats and oils, fish, dairy products and canned meats. The total of such exports in 1929 was \$244,248,000.

The exports of vegetable food products and beverages amounted to \$508,864,000 in 1929. Grains and the manufactures thereof were the most important, but substantial contributions were made by canned vegetables, fruits and nuts, including the canned products, vegetable oils and fats, and sugar.

Raw and Partly Finished Goods

Cotton is still the leading raw material exported from the United States. Even in recent years it has contributed large sums to the value of our export trade, although it no longer composes such a large percentage of the total as in former times. In 1925, foreign shipments were valued at \$1,059,700,000, about 21 per cent of the total exports. In 1929 the shipments were valued at \$770,830,000, and at smaller amounts during the depression years. Cotton, also, is meeting growing competition from other countries. The future of the export trade in this commodity depends to a marked degree upon the agricultural policy of the United States. Crop restriction, and price-raising devices, give outside competitors great opportunities for the establishment of their industries on a paying basis.

EXPORTS OF THE UNITED STATES BY COMMODITY GROUPS ⁴

GROUP	COMMODITIES	1929	1931
00 ..	Animal and animal products, edible .	\$ 244,248,000	\$ 117,566,000
0 ..	Animal and animal products, inedible	117,936,000	62,280,000
1 ..	Vegetable food products and beverages	508,864,000	256,320,000
2 ..	Vegetable products, inedible,—except fibers and woods	303,844,000	186,357,000
3 ..	Textiles	979,225,000	423,757,000
4 ..	Wood and paper	210,844,000	97,972,000
5 ..	Nonmetallic minerals	739,698,000	373,914,000
6 ..	Metals and manufactures, except ma- chinery and vehicles	538,500,000	180,903,000
7 ..	Machinery and vehicles	1,198,151,000	484,536,000
8 ..	Chemicals and related products	152,109,000	100,094,000
9 ..	Miscellaneous	163,666,000	94,282,000
Total		\$5,157,085,000	\$2,377,981,000

⁴ *Loc. cit.*, pp. 470-514.

Among other raw products are unmanufactured tobacco, lumber in various forms, and semi-finished non-ferrous metals. A summary of the export trade by classes is given in the table on page 66.

Commercial Policy

Domestic and foreign commercial policies, as these affect trading in the external world, are discussed elsewhere. We might add at this point that, in recent years at least, the Federal government has provided various organizations which in one way or another operate to stimulate foreign commerce.

With the formation of the Department of Commerce and Labor in 1903, but more particularly with the bestowing upon the Department of Commerce of a separate status in 1913, an effort was made not only to consolidate, but to enlarge the functions of the Department. Thus there was provided an active agency for the study of foreign trade conditions. Extensive surveys are made of external markets, business opportunities are discovered, exporters are informed of the details of marketing such as conditions of packing, shipping, credit, banking, and competitive arrangements.

The Tariff Commission, also, exercises important duties which relate to foreign commerce, such as the study of the operation of the American and foreign tariffs and recommendations concerning certain aspects of foreign trade policy.

The Shipping Board, which came into existence in 1916, was formed, among other purposes, to regulate carriers by water engaged in foreign and interstate commerce. The work of building up a merchant marine during the recent war fell to the lot of one of the divisions of this organization. In 1934 the Board still operated a large number of vessels. The plan seems to be to establish a number of steamship lines on routes deemed essential for American trade. Subsequently, when the service has been developed to a point where there is a promise of a reasonable profit, the vessels are sold to private interests. Indirectly at least, in recent years, Congress has provided a subsidy for ship-building. Under the Merchant Marine Act of 1920, shipping companies engaged in foreign trade were exempted from the payment of excess profit taxes provided the exempted sums plus a certain amount of new capital were invested in new vessels. The Jones-White Act of 1928 made provisions for loans to compensate for the construction of vessels.

Freight Carried in American Vessels

The measures discussed above have restored somewhat the importance of American vessels as carriers of oversea commerce. Just before the coming of the war, in the five year period from 1911 to 1915, only 10.6 per cent of the total water-borne exports and imports were carried in American vessels. The government-sponsored merchant marine changed these conditions. In 1920, the percentage was 43 per cent. But it has since declined. It might seem anomalous that during the years of great foreign trade expansion, notably after 1890, that a continually smaller proportion of such freight was delivered under the American flag. There were various reasons for this condition. For one thing, the cost of building and operating vessels under American jurisdiction was greater than with ships under a foreign flag. The American tonnage has constantly increased over the protected routes, that is to say, in the coastwise and inland trade. In this line of freighting, it was 2,645,000 tons in 1860 and 10,286,000 in 1931. In the foreign trade, on the other hand, it was 2,379,000 tons in 1860, and only 783,000 tons in 1910. The ship-building operations during the war raised the total in 1921 to 11,077,000 tons. But the amount declined to 5,576,000 in 1931, due to the sale of vessels and to the junking of those not fit for service.

Value of American Export Trade

Some idea of the development of the American export trade has been given in former sections. We may summarize this growth as follows:

EXPORTS FROM THE UNITED STATES IN GIVEN PERIODS: 1866-1930 ⁵

PERIOD	YEARLY AVERAGE AMOUNT	PERIOD	YEARLY AVERAGE AMOUNT
1866-1870	\$ 320,842,000	1911-1915	\$2,370,539,000
1896-1900	1,157,319,000	1916-1920	6,521,190,000
1901-1905	1,453,803,000	1921-1925	4,397,026,000
1906-1910	1,778,697,000	1926-1930	4,777,313,000

During the years from 1915 to 1920, the demands of the war in Europe required the export of enormous quantities of products from the United States, such as the manufactures of iron and steel, foodstuffs, explosives, chemicals and drugs. Moreover, these exports were figured at war prices. Further, during the war period, merchants and manufacturers

⁵ *Loc. cit.*, p. 432.

in the United States gained a larger share of foreign markets than they had enjoyed hitherto, a condition which was of some advantage after the war was over.

Territorial Distribution of American Exports

The countries of Europe are still the largest consumers of American exports, but their share in this export trade has declined to a marked degree in the last seventy years. In the period before 1860, between 65 and 75 per cent of our export trade was with Europe. Since 1925, this area has rarely taken as much as 50 per cent. This, of course, does not mean that our exports to Europe have declined. On the contrary, they have greatly increased, but other world divisions have developed to a stage where they are able to consume much greater quantities of our goods than in former years. This is particularly the case with Canada, with some of the larger countries of South America, and to a lesser extent with practically all the remainder of the Americas. Moreover, Asiatic countries, notably Japan, India, and China, have been receiving larger percentages of our exports, and this applies to some extent to Oceania and Africa. The distribution of the export trade, in stated years, is given in the table below.

DISTRIBUTION OF THE EXPORT TRADE OF THE UNITED STATES IN GIVEN YEARS
FROM 1870 TO 1930^a

YEAR	NORTH AMERICA		SOUTH AMERICA	EUROPE	ASIA	OCEANIA	AFRICA
	NORTHERN	SOUTHERN					
1870	5.5	7.9	3.9	79.8	1.5	1.0	.5
1890	4.9	6.1	4.5	79.7	2.4	1.9	.5
1900	7.0	6.5	2.8	74.6	4.8	2.9	1.4
1910	12.6	9.5	5.3	65.1	4.5	2.0	1.1
1920	12.0	11.5	7.6	54.3	10.6	2.1	2.0
1930	17.5	9.1	8.8	47.8	11.7	2.8	2.4

The trade of the United States has expanded into all the newer commercial areas. In some instances this country has received the largest benefits. This has been notably the case with portions of the Americas outside of the United States. This country has also made large commercial gains in certain Asiatic countries, notably in Japan, China and India. In all these areas, modern industry and commerce had hardly made a start before 1870, but since that date, development has been rapid.

^a *Loc. cit.*, p. 443.

The changes in the distribution of the export trade have been due largely to this expansion.

The United States has been the chief beneficiary of the modern industrial development in Canada. In the year 1928-1929 our share in the import trade of the Dominion was 68.6 per cent. This was composed of a diversified list of goods, quite like those supplied to consumers on this side of the border. In this respect, Canada seems to be a part of the natural trade area of the United States. A material factor in the development of this commerce is the fact that consumers in the United States can use many products of their northern neighbor, particularly lumber in various forms, wood pulp, newsprint, copper, nickel, fish and furs.

In Latin America, since 1880, the expansion of industry and commerce has been notable. This was particularly the case with Argentina, Brazil, Chile, Mexico, and Cuba. Liberation from Spain, as an outcome of the Spanish-American war, gave Cuba a great opportunity for development. Since that event, the island has enjoyed reasonable political stability, large amounts of foreign capital have been invested in resources and industries, and a new spirit of enterprise has been engendered. From 1900 to 1925 foreign trade expanded about four-fold. As with Canada, the United States received the chief benefits. Cuba imports many kinds of American manufactures, including fabricated foodstuffs, and ships us chiefly sugar and tobacco, although her exports to this country include considerable quantities of iron, copper, and manganese ores, and fresh fruits and vegetables.

The countries in the far south of South America are also large buyers of American manufactures; but our share in this trade is less than with our nearer neighbors. The development of this area has been the result partly of more settled political conditions which have prevailed since 1880, and partly to the growing need of the outside world for various commodities which Argentina, Brazil, and Chile can produce to advantage. Large foreign investments in mines and plantations, and in railroads and other commercial facilities, have contributed to growth.

In Asia, the rise of Japanese industry and trade has been one of the notable features of modern world commerce. The empire was practically closed to the outside world until the negotiation of treaties by Commodore Perry in 1854, and by Admiral Sterling, in behalf of Great Britain, in the same year. The opening of treaty ports in China, particularly after 1840, gradually paved the way for commerce with the western nations; in recent years, this made possible the modernization of certain

industries in the more accessible portions of China. Of necessity, with an area so long locked in tradition and poorly provided with means of communication, this has been a slow process.

Japan is poorly supplied with certain kinds of raw materials of which the United States is the most available source. Raw cotton is the largest import, amounting to \$127,401,000 in 1929, and to \$75,867,000 in 1831, in each case constituting nearly half the shipments from the United States. But exports from this country include, also, considerable quantities of lumber, iron and steel, mineral oils, copper, machinery, and automobiles. The United States enjoys a much larger portion of Japanese foreign trade than any other country. In 1929, 29.5 per cent of Japanese imports were from this country, and, due chiefly to the importance of raw silk, upwards of 42.5 per cent of Japanese exports were to the United States.

In the case of China, the proportion of the foreign trade with the United States is considerably less than with Japan, although this country usually ranks second, both with imports and exports. Japan is the most important factor in Chinese foreign trade. Among the chief exports from the United States to China are raw cotton, wheat, flour, tobacco, gasoline and kerosene, iron and steel, machinery, and electrical equipment.

The production of gold and diamonds, and the development of certain types of farming, have been the backbone of industrial progress in the Union of South Africa. The United Kingdom is the chief factor in this trade, participating in from 40 to 50 per cent of the total including imports and exports. A similar condition prevails in Oceania. While Australia receives a considerable number of manufactures from the United States, the chief imports are products of petroleum, tobacco, various kinds of machinery, automobiles, and chemicals.

As a rule, countries which are on the industrial stage import more largely of our crude materials and foodstuffs than of our manufactures. In 1931, about 40 per cent of American exports to Europe were manufactures. But conditions vary greatly from country to country, depending upon the extent of domestic resources, on other possible sources of supply, and on the state of home industries. For example, in the case of Germany, only 17.9 per cent of the imports from the United States were manufactured commodities, but 42.6 per cent were crude materials and 21.6 per cent were foodstuffs. Exports of manufactures to the United Kingdom were 33.2 per cent of the total, crude materials 25.0 per cent and foodstuffs 27.6 per cent. About 71 per cent of our exports to South

America were finished manufactures; and to Oceania and Africa the percentages were 75.1 per cent and 81.0 per cent respectively.

Exports to the Leading Countries

In the tables below we have summarized the leading exports to the United Kingdom, Germany, France, and Japan.

LEADING EXPORTS OF THE UNITED STATES TO THE UNITED KINGDOM ⁷

	1929	1932
Cotton and linters	\$185,035,000	\$57,390,000
Tobacco (unmanufactured)	72,795,000	23,541,000
Pork products	68,505,000	21,100,000
Gasoline	62,150,000	28,400,000
Wheat	57,143,000	5,118,000
Machinery	46,982,000	32,100,000
Copper	40,489,000	4,245,000
Wood, hard and soft	32,911,000	11,400,000
Motor cars, parts, etc.	30,668,000	5,500,000
Fruits, preserved	22,310,000	12,500,000
Apples, fresh	18,976,000	15,200,000
Lubricating oils	18,435,000	12,220,000
All others	297,337,000	64,648,000
Total	\$953,736,000	\$293,362,000

LEADING EXPORTS OF THE UNITED STATES TO GERMANY ⁸

	1929	1932
Cotton and linters	\$146,618,000	\$52,030,000
Mineral oils	37,780,000	13,953,000
Copper (crude)	33,944,000	4,471,000
Lard	25,188,000	11,957,000
Fruits and nuts	18,309,000	10,520,000
Wheat	11,678,000	5,142,000
Machinery	11,626,000	1,746,000
Timber and lumber	9,856,000	1,813,000
Others	131,484,000	39,336,000
Total	\$426,483,000	\$140,968,000

⁷ *Commerce Yearbook of the United States*, 1932, II, p. 291; *Yearbook of the Department of Commerce*, 1933, p. 145.

⁸ *Commerce Yearbook of the United States*, 1932, II, p. 119; *Yearbook of the Department of Commerce*, 1933, p. 60.

LEADING EXPORTS OF THE UNITED STATES TO FRANCE ⁹

	1929	1932
Cotton, raw and waste	\$95,336,000	\$29,867,000
Mineral oils	59,740,000	25,431,000
Copper	36,677,000	4,674,000
Machinery	21,652,000	9,801,000
Automobiles and parts	8,690,000	2,878,000
Tobacco, and manufactures	5,817,000	5,786,000
Wheat	5,767,000	5,648,000
Fruits and nuts	5,380,000	6,208,000
Others	41,595,000	24,110,000
Total	\$280,654,000	\$114,403,000

LEADING EXPORTS OF THE UNITED STATES TO JAPAN ¹⁰

	1929	1932
Cotton, raw	\$127,401,000	\$90,163,000
Wood	31,033,000	5,686,000
Iron and steel	18,408,000	3,284,000
Machinery and parts	17,467,000	4,828,000
Automobiles and parts	14,313,000	3,889,000
Mineral oils	8,107,000	5,259,000
Wheat	6,936,000	211,000
Sulphate of Ammonia	2,966,000	37,000
Aluminum, ingots, etc.	2,788,000	190,000
Others	72,100,000	29,778,000
Total	\$301,519,000	\$143,325,000

Canada

The United States, Canada, and Mexico are in the main political divisions in North America. We will include Mexico in our discussion of Latin America. As with other parts of the world, the foreign commerce of Canada has undergone a remarkable expansion since the turn of the twentieth century. The development of the foreign trade is due mainly to the growth of sales of certain agricultural products such as wheat and flour, pork and dairy products which often amount to more

⁹ *Commerce Yearbook of the United States*, 1932, II, p. 86; *Yearbook of the Department of Commerce*, 1933, p. 44.

¹⁰ *Commerce Yearbook*, 1932, II, p. 552; *Yearbook of the Department of Commerce*, 1933, p. 270.

than 25 per cent of the total foreign shipments, to the development of certain minerals, such as copper, nickel, gold and asbestos, and of the more extensive exploitation of the forest resources. Shipments of wood in various forms, wood pulp, and newsprint are among the largest exports. To these we should add fish and furs, which for many years have been customary exports of this country.

There is no possibility for the relatively small population of Canada consuming the varied products which the resources can produce. Numbers of people in 1931 were 10,300,000 having increased from about 3,600,000 in 1871. Canada, like the United States, has experienced a notable westward movement, a condition which is largely responsible for the development of wheat-growing and for the rise of the meat and dairy industries. The central and western provinces probably did not contain 100,000 persons in 1870; the population to-day exceeds 3,000,000.

This country covers about 3,600,000 square miles—an area more extensive than that of continental United States (3,026,000 square miles). A large part of Canada, however, is unproductive, particularly the portions which extend into the Arctic and sub-Arctic regions. But a broad belt of farming and timber land extends across the country, with some interruptions, from coast to coast. The timber area, which covers from 500,000,000 to 600,000,000 acres is one of the most extensive resources of its kind in the world.

Canada, also, possesses a number of valuable minerals, for some of which—nickel, asbestos, and mica—she is among the chief sources of world supply. The output of copper has grown from 78,600,000 pounds as an annual average from 1921 to 1925 to 303,400,000 pounds in 1930, elevating Canada to a place among the world's chief producers. From 2,000,000 to 3,000,000 ounces of gold is produced each year, about one-fifth the amount produced in South Africa. The mineral output includes lead, zinc, cobalt, silver, arsenic, coal, petroleum, and a number of minor minerals.

Large sums of domestic capital have been invested in manufactures and this has been augmented by even greater amounts from the United States and Great Britain. In 1929, the country contained some 23,500 establishments with a manufactured output valued at \$4,029,000,000.

Proximity to the United States, added to the fact that many of the raw materials of Canada supplement our own, has made possible a large exchange of goods between the two countries. In normal times, upwards of 60 per cent of Canada's imports are from the United States and about 40 per cent of Canadian exports are to this country. We obtain from

the other side of the border large quantities of newsprint which is the largest import, wood pulp, crude and semi-manufactured wood, copper, nickel, furs and sizeable quantities of other products. Canadian markets are much like our own, which signifies that the exports to this country includes most of the goods which are consumed within the United States. The United Kingdom is the second most important factor in Canadian trade, supplying from 15 to 20 per cent of the imports, and taking from 25 to 35 per cent of the exports, of which wheat and flour constitute the most important items. The total trade in 1933 was \$775,000,000 which was only about one-third the amount in 1929.

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CHAPTER VI

IMPORT TRADE OF THE UNITED STATES

In spite of a great diversity of resources, the United States—including America in colonial times—has always been a large importer of foreign goods. Many communities in the new country were largely self-sustaining, but there were certain foreign commodities which they needed. Importation became more extensive with the rise of the scale of living. The list included such goods as tea, coffee, cocoa, spices, salt, sugar, wines, cutlery, clocks and jewelry, furniture, ornaments, fine fabrics of wool, silk, and linen, and silver plate, not to name them all. In many cases these commodities catered to the wants of the better-to-do classes; but, in the course of time, all people became consumers of certain imported articles. This condition led Tench Coxe, about 1790, to advocate the more extensive manufacture of products within the United States, because this policy “will give us real independence, by rescuing us from the tyranny of foreign fashions and the destructive torrent of luxuries.”¹

Colonial Commerce

During the colonial period, and for many years after, Britain was the chief source of American imports. The substance of British colonial regulations was to make the dominions dependent on her both as a market for their exports and as the source for their external purchases.

At this time the enforcement of the laws was lax and evasions were frequent. But at that, Britain enjoyed certain advantages which made her the natural market for colonial products and the mart from which the colonies were largely supplied. None the least of these were the organization of British commercial facilities, British command over a considerable part of the world's carrying trade, the wealth and experience of British merchants, and banking facilities especially organized for handling distant commerce. Many goods obtained through these channels were the products of British shops; and since British industries were more diversified than those of other regions, Britain was the only

¹ *View of the United States of America* (Dublin, 1795), p. 45.

source from which many desired commodities could be obtained. In addition, British merchants traded with practically the whole commercial world to obtain products for sale at home and in the dominions.

Foreign purchases ran the gamut of consumable goods, from the most urgent necessity to the most extravagant luxury. In the latter class were many objects of display and refinement, seldom made in the colonies. The list included "common pressed dolls, carts, chairs, horses for children; fiddlers for children, sorted toys, three and four joint solid rods, kirby and common hooks, silk and hair lines, flied and gut, six and eight stave reels . . . straw, Japanned, and carved ivory tooth pick cases, playing cards, morocco pocket books . . . paste necklaces and earrings, silk and velvet needle cases, . . . backgammon tables . . . fine paper mâché snuff boxes, engraved ditto." ²

Woolens were among the most important imports, but the list included wrought iron, nails, tools, silk and leather goods, linens, cordage, gun powder, lead, shot, brass, and wrought copper. Raw wool was brought from Spain, spices from some Mediterranean countries, salt from Portugal and the West Indies, wines and fruits from Madeira and the Canary Islands. Merchant traders understood the markets in which they bought and sold. They gathered from port to port the assortment of commodities which they expected to sell elsewhere along the route, and they kept American needs constantly in mind because this was one of their best markets.

Not only necessity, but custom and tradition frequently dictated the character of imported goods. Class distinctions were then much more a part of the order of the times than to-day, and consequently, modes of consumption were sometimes indicative of a person's social position. This tended to direct an appreciable amount of consumption into foreign goods. In general, "rank and vocation set fashions and created habits that modified the influence of competition upon the respective consumption of domestic and imported textiles. A New England farmer might, by prejudice and unquestioning want, use homespuns when foreign clothes were selling at the lowest prices, while a city gentleman, even in financial distress, would hardly wear the product of family industry." ³ The market for finer manufactured commodities was "dominated by British goods, except when business depression or political agitation disturbed the normal course of trade."

² Quoted from Victor Clark, *History of Manufactures in the United States (1607-1860)* (Carnegie Institution of Washington, 1916), Vol. 1, p. 108.

³ Clark, *op. cit.*, p. 109.

The Value of Colonial Import Commerce

The estimates of the value of colonial commerce may be somewhat wide of the mark for several reasons: the absence of data on the illicit trade, the fragmentary character of the information, and the tendency of British officials to overestimate the value of exports to the colonies and to under-state the value of the incoming trade. The total imports into the continental colonies for 1700 were given as £344,200; for 1750 as £1,314,000; and for 1770 as £1,925,000. At all times, the commerce of Virginia and Maryland, whether imports or exports was greater than that of any other colonial division. In 1770, for example, the imports into this section was nearly 35 per cent of the total.

Throughout this period the balance of trade was continuously against the continental colonies. This was especially true of New England, New York, and Pennsylvania, since this section had no commodities comparable with tobacco, rice, and indigo, for export. Thus it was more the inability of these colonies to find a means of purchase than the lack of the home country to expand her industries that tended to restrain the more rapid development of commerce. This factor was also a circumstance in promoting the growth of colonial manufactures; because of the lack of purchasing power, the Americans were forced to produce locally a considerable volume of goods which might have been obtained at less cost elsewhere.

The unfavorable balances to the home country were discharged from the surpluses of the West Indian business and from the profits of the colonial carrying trade. The course of trade development during colonial times might be summed up as follows:

"During the last century of colonial history a growing market abroad caused primary manufactures in America to expand and multiply; and foreign competition, though it continued to limit, did not seriously encroach upon existing manufactures for home consumption. The market for the productions of local industry was protected by conditions that remained nearly uniform, and though its influence may not have increased the volume of home manufactures much faster than the growth of population, it tended to diversify and specialize them and thus to prepare the way for their more rapid extension under the Republic."⁴

Commercial Policy

At this time, the trade policy of all nations was characterized by more

⁴ Clark, *op. cit.*, p. 122.

or less rigid control over commercial dealings. The nations applied this policy also to their dominions. Free trade, as a foreign policy, had not yet entered the heads of the statesmen.

In the case of Britain, the navigation acts, particularly after 1651, placed various restriction on trading outside the dominions, and to some extent, even within the possessions. This policy was amplified and extended in the acts of 1663, 1672, and 1696, until not only shipping, but trade with the home country, with Europe, and among the several colonies, was brought within the jurisdiction of the laws. Various other restrictions were added during the period from 1763 to the advent of the Revolution.

The colonies themselves made use of regulative devices. Sometimes the purpose was to build up home trade by restrictions upon either imports or exports, or both. In other cases, domestic industries were encouraged by bounties, premiums, prizes, and by other means designed to build up home production. The principles of mercantilism were rather thoroughly applied to all kinds of economic activities.

In many respects, the effect of these laws was merely to emphasize tendencies which were already in operation. The navigation acts, for example, stimulated shipbuilding—an industry in which some of the northern colonies already enjoyed considerable advantages. The acts which encouraged local manufactures frequently gave assistance to enterprises which possessed local facilities. All that was necessary was governmental assistance to tide them over the initial stages. The oppressive features of the laws were frequently diminished by the ease with which they were evaded.

Commerce during the Early Years of the New Government

American privateers succeeded in maintaining a considerable commerce on the high seas in spite of the handicaps of the War of the Revolution. Subsequent to the war, foreign commerce was forced to contend with new domestic and foreign conditions. Because of the unsettled political status of the liberated colonies, most foreign nations were suspicious of proposed treaties. With respect to Britain, the states were now outside the fold of the Empire and could not count upon the favored treatment of former times. Moreover, "each of the thirteen independent sovereignties contemplated its own immediate interests; some of the States declared the commercial intercourse with them to be equally free to all nations, and they cautiously avoided to lay duties on such

merchandise as was subject to them, when imported into other States." ⁵ But foreign trade regulations of the new states were by no means uniform, nor did they become such until after the formation of the Constitution.

During the first quarter-century of government under the Constitution, the course of American commerce, whether exports or imports, was affected to a marked degree by the flow of European events. American statesmen of these times favored rather free commercial relations with all the world. This country could produce unlimited supplies of raw and partly finished goods which other nations could use, and it was thought that trade in such products would bring great prosperity. It was believed, moreover, that the export of these commodities would supply an ever increasing purchasing power for imported goods. Thus it seemed to these statesmen that a liberal foreign trade policy was the proper course.

Attempts were made to negotiate treaties with a number of nations. While this effort was crowned with some success, the outside world was not yet ready, as a rule, to abandon rigid restrictions. Moreover, during a considerable part of this period, Europe was absorbed in wars, and commercial regulations were a part of the war program.

The war between France and England, which began in 1793, brought uncertainties for American commerce. As neutrals, traders on this side of the Atlantic hoped to gain an advantage in carrying a large share of the world's commerce. But all ocean trade was hampered shortly by arbitrary rules and orders. In spite of these difficulties, American ship-owners succeeded in obtaining a considerable share in the ocean-carrying trade. Our commerce increased rapidly. Imports more than trebled from 1793 to 1801—from about \$31,100,000 to \$111,363,000. Great quantities of goods brought into this country were reexported, and consequently the out-going trade expanded at nearly the same rate as the import trade.

When peace was temporarily restored in 1802, England, France, and other countries resumed their carrying trade, and American commerce fell off. In 1803, the import trade was only a little more than half what it had been in 1801. But with the renewal of hostilities in 1803, the trade fell back again into the hands of the Americans. Imports reached \$138,500,000 in 1807, and exports amounted to \$108,343,000. These figures were not again exceeded until after the conclusion of the war of 1812. All foreign trading fell under the ban of French and English orders and

⁵ *Statistical View of the United States, "Compendium of the Seventh Census,"* p. 185.

decrees; subsequently, our Embargo of 1807, and the Non-intercourse Act of 1809, put the finishing touches on further hopes for immediate trade expansion.

With the conclusion of the War of 1812, the pent-up British manufactures were dumped upon American markets. In the four years from 1815 to 1818, inclusive imports not only reached the highest level thus far attained in American commercial history, but greatly exceeded the exports. The trade of these years is shown in the table below:

FOREIGN TRADE OF THE UNITED STATES: 1815-1820 ⁶

YEAR	IMPORTS	EXPORTS	TOTAL
1815	\$113,044,000	\$52,557,000	\$165,601,000
1816	147,103,000	81,920,000	229,023,000
1817	99,250,000	87,671,000	186,921,000
1818	121,750,000	93,281,000	215,031,000
1819	87,125,000	70,142,000	157,267,000
1820	74,450,000	69,691,000	144,141,000

Development of American Tariff Policy

Any illusions which more liberal Americans might have held concerning the willingness of European nations to make considerable concessions to obtain an enlargement of trade with the United States were dispelled by 1816. The vulnerableness of the American market was painfully evident during the years from 1815 to 1818. Moreover, the difficulties of commerce with Europe and the enforced decline in consumption of European goods during the periods of the Embargo, Non-intercourse Act, and War of 1812, served to promote the growth of domestic manufactures. The new industries now demanded protection, and the dumping of British goods during 1815 and 1816 added a point to the argument.

Not that the United States had been on a free-trade basis before this time. Customs regulations had been among the earliest acts of Congress. By the law of 1789, specific duties were laid on over thirty kinds of commodities, and ad valorem rates ranging from 7½ to 15 per cent were placed on a number of articles, not to mention a 5 per cent duty on all goods not enumerated. These duties were changed from time to time; the list was extended somewhat, and moderate additions were made to these rates. But, on the whole, duties were low, compared with the experience of later years.

⁶ *Op. cit.*, p. 185.

The Act of 1816 marked a decided change of attitude. There were still sections of the country whose interests were mainly commercial. These regions were opposed to material additions to the rates, but other parts of the country were willing to try a protective system. The South depended largely on foreign markets for the consumption of its chief staples, but many southern representatives believed that it was safer to cast their lot with the home market which they believed could be developed, than to trust to an uncertain foreign trade. The country was in a favorable frame of mind for the introduction of protective principles.

Thus the Act of 1816 marked a change of policy. The protective point of view was supported by arguments that it was necessary to defend infant industries, to foster the growth of home markets, to encourage investment of foreign capital, to stimulate immigration, and to develop a well-rounded industrial system, including the exploitation of the varied resources of the country. Most of these arguments had been presented at an earlier date, but the occasion had now arrived when they could be used effectively.

By the Act of 1816 cottons and woollens especially were singled out for favored treatment; but, in addition, considerable protection was afforded to the manufacturers of leather, paper, hats, carriages, and cabinet ware, not to name them all.

This was only a beginning. Higher duties were provided on various occasions, notably in the acts of 1818, 1824, and 1828. With the act of 1828, the earliest protectionist movement came to an end. Attempts were made in 1832, and more successfully in 1833, to bring the rates to lower levels. The law of 1833 provided for a biennial reduction, during the period from 1834 to 1842 until, at the latter date, the level was about 20 per cent.

Protectionist sentiment gained the upper hand in 1842, but the act of this year was only of brief duration. Revision downward was again effected in 1846, and the Act of 1857 brought the rates to still lower levels. The advent of the Civil War tariffs changed the course of our foreign trade policy and ushered in another protectionist period from which we have never emerged.

It is impossible, of course, to state how much of the growing import commerce after 1833 was due to the more liberal trade ideas and how much to other causes. The country was growing rapidly in numbers and in wealth. Industries were becoming more diversified and the need for foreign raw and partly finished stuffs was increasing. Under such

conditions, the import trade would have increased. At any event, imports increased rather rapidly from 1830 to 1860, with occasional setbacks, during periods of hard times. After the large imports of the years from 1815 to 1818, the foreign receipts did not again pass the hundred-million mark until 1831. In that year they amounted to \$103,191,000. They were \$189,900,000 in 1836, the year before the panic. The annual average imports from 1851 to 1860 was \$284,475,000.

Sources of American Import Trade: 1821-1860

During this period the United States traded with all the world divisions, but the chief sources were the western countries of Europe. In fact, if we may take the year 1830 as an example, England supplied 35 per cent of our imports and British possessions shipped an additional 7 per cent. From England came a variety of cottons, woolens, linens, laces, products of iron and steel, earthenware, and various articles of minor importance. France supplied the United States with about 10 per cent of the total. From this source came silks, wines, fruits, certain classes of cottons and woolens, and minor quantities of furs and cotton goods. Spain and her possessions shipped about 10 per cent of our total imports. But Cuba was the most important source in this group, exporting chiefly sugar, coffee, and molasses.

In addition to the goods named above, hides were imported from Brazil, Argentine, Chile, Peru, and Russia; copper from Chile, Peru, and China; coffee from Cuba, Brazil, and various West Indies; lead from England, Spain, France and the Hanse Towns. The imports into this country contained also a long list of articles from various divisions of the world. There were no important changes in these sources from 1830 to 1860. But subsequently, with the industrialization of the larger nations, and with the opening of new resources by capital from the

SOURCES OF AMERICAN IMPORTS; 1821-1860 ⁷

	NORTH AMERICA		SOUTH				
	NORTHERN	SOUTHERN	AMERICA	EUROPE	ASIA	OCEANIA	AFRICA
1821	0.7	21.7	2.9	64.2	9.8	0.1	0.7
1830	0.6	17.2	7.8	64.0	10.0	0 ⁸	0.4
1840	1.2	15.7	8.8	62.8	10.9	0.2	0.5
1850	3.0	9.3	9.2	71.0	7.2	0 ⁸	0.4
1860	6.7	12.5	9.9	61.3	8.3	0.3	1.0

⁷ *Statistical Abstract of the United States*, 1932, p. 443.

⁸ Less than one tenth of one per cent.

richer countries, the map of international commerce began to display remarkable changes. The relative importance of the various sources of our imports is shown in the table on page 83.

During this period, Europe continued to maintain its relative position as an exporter to the United States, but considerable gain in position was made by Canada under a reciprocity treaty with Great Britain. There was also a relative increase in importance of the import commerce with various Latin American countries. During this period too, rubber came into considerable use; Brazil was the chief source of supply. We also increased our imports of coffee, valued at \$16,984,000 in 1860. In fact, even at this early date Brazil supplied the United States with nearly 80 per cent of its requirements; but the commodity was also imported from Colombia, Venezuela, Hayti, and from the British and Dutch East Indies. Further, Brazil, Argentina, Uruguay, Venezuela, and Colombia became our principal sources of imported hides, and Chile had already begun to export small quantities of natural nitrates—a trade which was destined to grow to large proportions.

In Asia, China and Japan had been opened for commerce with the external world. But the commerce with the latter, at least up to 1860, was of small importance. The trade with China was of far more significance. From this source came our largest supplies of tea; also silk piece goods, sewing silk, matting, ginger, black pepper, and considerable quantities of brown sugar.

A feature which distinguishes the import trade of this era compared with the one subsequent to 1860 was the dominance of finished and semi-manufactures in the import business. In fact, as late as the decade

IMPORT TRADE; PERCENTAGE OF CERTAIN CLASSES: 1851-1930 ⁹

PERIOD	SEMI-				
	CRUDE MATERIALS	CRUDE FOODSTUFFS	MANUFACTURED FOODSTUFFS	MANUFACTURES	FINISHED MANUFACTURES
1851-1860	9.63	11.70	15.43	12.50	50.74
1861-1870 . . .	12.92	14.26	18.70	13.23	40.89
1871-1880 . .	17.33	16.34	19.10	13.01	34.22
1881-1890 . . .	21.31	15.34	17.72	14.84	30.79
1891-1900 . . .	26.53	16.87	16.92	13.86	25.82
1901-1910 . . .	33.97	11.95	12.08	17.23	24.27
1911-1920 . . .	37.52	12.47	14.36	17.27	18.38
1921-1930 . . .	37.10	11.83	11.43	18.28	21.36

⁹ *Statistical Abstract of the United States*, 1932, p. 437.

ending in 1860, this class of goods composed about 62 per cent of the incoming commerce. Crude materials were only 9.6 per cent. Moreover, throughout this period, there had been only insignificant changes in the relative importance of the various classes of imports; manufactured goods were always of the greatest importance; crude materials, of the least. This condition changed to a marked degree after 1860, as is indicated in the table on page 84.

Industrial Changes

The most significant changes shown by this table are the decline in relative position of imported finished manufactures, and the great expansion in the inflow of crude materials. There was some falling off, relatively, in crude and manufactured foodstuffs, notably after 1860.

During the years from 1830 to 1860, no great change occurred in the relative position of the various components of our industrial structure. Progress in all divisions of the system proceeded at approximately the same rate. But this type of development began to change shortly after 1860. Rapid industrialization came into force not only in the United States but also in some of the countries of western Europe. These nations needed certain American raw materials; we needed relatively less of their manufactured goods. The significance of this change may be gathered from the growth of our manufactures. In 1860, the output of our factories was only \$1,800,000,000; by 1880 it had expanded to only \$5,300,000,000; but in 1900 it had become \$11,400,000,000, and by 1920, \$62,400,000,000. It was \$70,100,000,000 in 1930.

A mere statement of figures cannot reveal what was taking place within the industrial structure itself; nor can a brief exposition tell this story. But it might be suggested that along with this expansion in magnitude went an intricate development of the parts of the manufacturing and commercial organization. Thousands of new industries came into existence. Patents multiplied with great rapidity. The total number of applications for patents in the ten years ending with 1860 were only 44,300; the number amounted to 885,000 in the ten years ending with 1930,¹⁰ and this does not indicate thousands of improvements which were not patentable. One outcome of these changes was that the demand for raw products became not only more intense but much more varied. No industrialized country contains within its borders adequate supplies of all the materials required for its varied industries. This was particularly true of the United States where diversification moved at a

¹⁰ *Loc. cit.*, p. 786.

more rapid rate than elsewhere among industrialized countries. We needed not only more but a much greater variety of textile fibers; also greater quantities of many kinds of materials to meet the more or less exacting demands of the new industries. This was particularly the case with the basic metal manufactures where industrial requirements called for increasing quantities of minor metals, some of which are not produced within our borders, or at least were not mined in sufficient volume to meet our needs. Thus the import trade includes nickel, tin, antimony, tungsten, manganese, vanadium, and others, most of which were not items in international commerce in 1860.

Due sometimes to localization of certain industrial plants within the United States and sometimes to lower production costs abroad, and to the need for specific kinds of minerals, we often import considerable quantities of the same class of products of which we have large resources at home. For example, in 1929 we imported over 3,000,000 tons of iron ore and concentrates, 380,000 tons of crude bauxite—the mineral from which aluminum is obtained—180,000 tons of copper ores and concentrates, 79,000,000 barrels of crude petroleum, to say nothing of the manufactures of these various materials.

The same statement applies to a considerable range of agricultural products, of which we are one of the largest producers in the world. This is the case with animals, meat products, dairy products, vegetables, fruits, sugar, vegetable oils, seeds, and nursery products. The imports of some of these classes amount to millions of dollars. We are large importers of raw cotton—223,000,000 pounds in 1929—and of wool, flax, and hemp. These are only examples. In each case, although our home output is large, some particular reason exists for the dependence on foreign sources.

All this signifies that in spite of the great abundance and diversity of domestic resources, the progress of industrialization has made us more and more dependent on the outside world. The reasons are found partly in the exacting nature of the demand for raw materials, which must meet the precise needs of the manufacturers. In this connection, nature has not distributed either mineral or field products equally over the world, and a nation in need must seek out these materials wherever they can be obtained.

Curiously enough, along with this growing dependence on external sources, there has developed an opinion within the United States which demands a "self-contained America." Members of this school of thought, undoubtedly, have unlimited faith in the ability of inventors

and discoverers to reveal adequate substitutes for the substances which we now import. It would be difficult to understand how this might be done in the case of many of the non-ferrous metals, the many products of tropical or subtropical climates and other products. To build a paneled wall around the United States for the exclusion of foreign commercial relations would impose upon us the enormous cost of finding substitutes for the materials which we now import. In addition, it would exclude us from foreign markets for the great surpluses of certain types of goods, both raw and manufactured, of which we have a superabundance.

The table given on page 84 indicates that we are still large importers of manufactured commodities, although the percentage of the total is much less now than in 1860. Such imports include hundreds of different kinds of goods, some of which are the product of the art and skill of foreign workers and could not be easily duplicated in the United States. Some are due to the peculiarities of foreign discovery or invention; and not infrequently, lower foreign costs are the chief factor in the import.

Whatever the cause, foreign shipments to the United States of manufactured goods contain many kinds of textiles, as of old, whether of cotton, wool, flax, jute, or silk; leather of various kinds and uses—patent, upholstery, bags, cases—and the material itself in the form of tanned leather from cattle, goats, reptiles; the imports include also, furs in various stages of manufacture, vegetable oils—tung, coconut, olive, colza, sesame, attar, lavender, etc.—paper stock, clay products of various kinds, precious stones, products of iron and steel, chemicals, toys, clocks and watches, and numerous others.

The table on page 88 indicates the imports of raw or partly finished goods.¹¹

These materials are obtained from practically every region of the earth. Silk, for example, is imported mainly from Japan; copper from Chile; vanadium from Peru; nickel from Canada; tin from Malaya and Bolivia; manganese from Brazil and Russia; in all cases minor quantities are imported from other places. Coffee comes mainly from Brazil, as in the former period, but Colombia, various countries of Central America, Porto Rico, and some areas of the Far East contribute their supplies; rubber is mainly a product of the British and Dutch Near Eastern dominions, but Brazil, and several other South American countries add something to the quota. Sugar is imported mainly from Cuba, Porto Rico, Hawaiian Islands, the Philippines; petroleum, from Vene-

¹¹ *Loc. cit.*, pp. 518-536.

MATERIAL	1929
Silk, unmanufactured	\$ 432,340,000
Non-ferrous metals	307,342,000
Coffee	302,397,000
Rubber and its manufactures	247,420,000
Sugar and related products	229,740,000
Petroleum and its products	143,558,000
Hides and skins	137,281,000
Furs and their manufactures	125,852,000
Paper, base stock	118,133,000
Jute and its manufactures	95,900,000
Vegetable oils	91,486,000
Wool	87,344,000
Fruits and nuts	86,898,000
Fertilizers and materials	72,340,000
Oil seeds	79,325,000
Tobacco and manufactures	60,617,000
Cotton, unmanufactured	53,333,000
Total	\$2,671,306,000

zuela, Mexico, Colombia, and from a few other Latin American sources; wool, either directly or indirectly, from Australia, New Zealand, Argentina, Union of South Africa; jute from India; and cotton from Egypt, Peru, with smaller quantities from other sources. These, again, are only illustrations. Practically every region of the world that has a means of conveyance to the sea, ships something to this country. In some cases, although the quantities are small, the commodities occupy a place in our industrial system which is of far more significance than the value, or the volume, of the import.

The imports into the United States by commodity groups is shown in the table on page 89.

Trade Policy

Our trade policy, with respect to foreign relations, has been constructed largely with reference to export commerce. In far too many instances, we have been inclined to look upon the import trade as a necessary evil, to be tolerated, rather than to be stimulated. In one way or another, the foreigner is looked upon as a competitor of the American in his own home market, and as a result, what is gained by the foreign exporter is supposed to be lost by the American producer, whether farmer or manufacturer. Only a little research would reveal

IMPORTS INTO THE UNITED STATES BY COMMODITY GROUPS ¹²

GROUP	COMMODITY	1929
00 ...	Animals and animal products (edible)	\$ 142,169,000
0 ..	Animals and animal products (inedible)	396,818,000
1 ...	Vegetable food products and beverages	818,724,000
2 ...	Vegetable products (inedible) except fibers and wood	553,660,000
3 ..	Textiles	1,001,909,000
4 ...	Wood and paper	377,328,000
5 ..	Nonmetallic minerals	306,050,000
6 .	Metals and manufactures, except machinery and vehicles	395,953,000
7 ..	Machinery and vehicles	42,202,000
8 .	Chemicals and related products	144,062,000
9 ..	Miscellaneous	220,485,000
Total		\$4,399,360,000

the fallacy of this point of view. Much of what we obtain from abroad is imported in spite of restrictions placed on trade, rather than as a result of encouragements to this class of trading. Yet, a well-considered policy of building up certain classes of imports would rebound to the benefit not only of American consumers generally but of American producers as well.

Private enterprise has done more to supply the conditions for import trade than governmental encouragement. This is due possibly to the fact that individuals, or companies, pursue their own course irrespective of its general effects. One helpful line of policy has been investments abroad which, either directly or indirectly, have supplied a powerful stimulant to trade development. Sometimes this has come about through the opening of new resources; this has supplied backward countries with a means of purchase in the outside world; but, of course, it has meant the export of the products of the newly developed resources. Sometimes the invested capital has expanded the facilities of trade, with the result that new channels have been opened for the flow of commerce. A considerable portion of the new commerce since 1880 has been due to the enterprise of the foreign investor. This is true notably with many of our Latin American neighbors; but it is true, also, of great areas in South Africa, in Australia, and in Southern Asia.

¹² *Loc. cit.*, pp. 516-548.

Sources of American Imports Since 1860

Since 1860, the import trade into the United States from practically all the world divisions has gained in relative position at the expense of similar trade from Europe. In 1860, Europe supplied us with something over 61 per cent of our total imports, but in the decade from 1921 to 1930, the European share was about 30 per cent. On the other hand, Asiatic trade in 1860 amounted to only about 8 per cent of the total; it was about 28 per cent during the ten years ending with 1930. Import commerce with Canada, South America, and with Oceania and Africa is of greater relative importance to-day than it was in 1860.

To a large extent these changes are due to shifts in the relative importance of our imports. Raw materials, since 1860, have constituted an ever increasing portion of the incoming commerce. We have sought these in parts of the world where they can be obtained to the greatest advantage. In many instances, this growing importance of raw products results from the appearance of classes of industries which have come into existence during the last half century. Nine classes of commodities, which in 1929 supplied over 30 per cent of our total imports, were in this category. This was the case with rubber, jute, tin, wood pulp, raw silk, crude petroleum, and of various gums, balsams, resins, oil seeds and vegetable oils.

With respect to manufactured goods, the growing wealth of this country has been responsible for the purchase abroad of a large number of commodities which are more or less in the luxury class. Our total foreign bill for such goods is frequently in excess of half a billion dollars. The purchases include Oriental rugs, wearing apparel, manufactured silks, precious stones, art works, furs, ornamental glassware and pottery, and such foodstuffs as fruit, nuts, and cocoa, or cacao beans, to give the name of the raw material. These also are obtained from many world divisions.

Total Import Trade

The outcome of these various currents of industry and consumption was to add, decade after decade, increasing amounts to the import commerce of the country. This condition is summarized in the table on page 91.

The rapid expansion of the import trade began about 1880; it corresponds in time with the coming of the era of greater industrialization. A long period of preparation was necessary for this development. It had

GENERAL IMPORTS BY DECADES: 1860-1930¹³

DECADE	ANNUAL AVERAGE	DECADE	ANNUAL AVERAGE
1861-1870	\$331,867,000	1901-1910	\$1,163,500,000
1871-1880	525,221,000	1911-1920	2,535,336,000
1881-1890	692,186,000	1921-1930	3,741,786,000
1891-1900	763,378,000		

been characterized by the accumulation of capital, by the development of a machine industry which was capable of caring for the needs of new enterprises as they arose, by the completion of the major railroad building program of the country, and by the discovery of the greater resources. The earliest era in the combination movement began about 1880. Business units became larger and more effective; newer selling devices were adopted, and the commercial organization underwent rapid changes to meet new conditions. All this was accompanied by an increase in incomes, by a great increase in wealth, and by an enormous expansion of buying power. Technical advances imposed the necessity of a more careful selection of raw materials to meet highly specialized needs. Meanwhile, the development of new classes of industries frequently made necessary the quest for raw materials which were not produced within the United States. These conditions acted upon domestic industrial development; but they also exerted powerful influences on foreign trade, both exports and imports.

The International Balance Sheet

An interesting feature in the expansion of commerce, particularly in the last fifty or sixty years, has been the growth in importance of what the economist calls the "invisible items." To a large extent, no doubt, these are involved, either directly or indirectly, in the movement of commodities. But they frequently express themselves, in the first instance, in the rendering of some kind of international service. Among these are the ordinary charges for the handling of goods which move in foreign trade, such as freight, insurance, commissions, profits on transactions. The great bulk of the shipping of the world is owned in only a few countries. A large part of the marine cargoes float under flags other than those of the nations in which the commodities for export are produced. Only a few countries have a highly developed marine insurance organization. Moreover, the banking facilities which are used to finance

¹³ *Loc. cit.*, p. 432.

the huge flow of international commerce are provided in a few of the industrialized countries. Charges for all these services affect the debtor or creditor relations of the countries, sometimes to their embarrassment, and at times gravely influence the flow of commodities themselves. In former times, it was said that "imports pay for exports"; but, at least with the larger countries to-day, payments abroad are made with the goods they export plus their charges for rendering various kinds of services.

The composition of the international balance varies from country to country; the magnitude of the items, also, varies from time to time. In the table given on page 93 is presented the balance sheet for the United States in 1929.

Except in the panic year of 1892, the United States has had a continuous favorable balance of trade, that is to say, of physical exports over imports, since 1890; for that matter, the trade has been favorable during most of the other years back to 1860. In the period before this date, the imports, as a rule, exceeded the exports.

The phenomenon of a continuous favorable balance of trade is the result of many cross-currents in our international financial relations. We are a debtor with respect to certain transactions; this is the case with payments of interest, and at times repayment of principal, on foreign investments in the United States, with the heavy charges for tourists' expenses, with freight and insurance on our ocean cargoes, and with immigrant remittances. But on the other hand, we have become a creditor with respect to a considerable number of transactions; this is true, notably since 1914, as a result of our growing investments abroad.

In the war period, we were large exporters of foodstuffs and war materials. During the four years from 1916 to 1919 inclusive, this favorable balance was never less than \$3,000,000,000 a year, and the total excess of exports over imports during these four years was about \$16,455,000,000. At that time there was no possibility for foreign countries to offset their needs by actual payments, of whatever kind, or by rendering considerable commercial services, for which they might have demanded payment. Under these conditions, they became heavy debtors to the United States.

Thereby hangs the troublesome question of the inter-allied war debts. The repayment of these loans raises interesting questions not only as to the capacity of the debtor nation for payment, but, granted the capacity, the possibility of making the necessary transfers to this country. These matters have been the subject of much heated debate on both

ESTIMATED BALANCE OF INTERNATIONAL PAYMENTS OF THE UNITED STATES:
1929—(000,000 omitted) ¹⁴

CLASS OF TRANSACTIONS	CREDIT	DEBT	BALANCE
Merchandise exports and imports	\$5,241	\$4,400	+ 841
Freight payments and receipts	154	269	- 115
Tourists' expenses	177	839	- 662
Earnings on long-time private investments, (received from American investments; paid to foreign investors)	876	270	+ 606
Earnings of short-term interest and commissions; (Received from foreigners; paid to foreigners)	100	144	- 44
Immigrant remittances	24	247	- 223
War debt receipts by the United States	212	5	+ 207
New American investments abroad (deducting commissions, etc.)	61	696	- 635
New direct investments of Americans abroad (including stocks and bonds bought from foreigners)		923	- 923
Reduction of previous American investments abroad	776		+ 776
New foreign investments in the United States (including American stocks and bonds sold to foreigners)	1,568		+ 1,568
Reduction of previous foreign investments in the United States (including American stocks and bonds bought back)		1,172	+ 1,172
Gold shipments	117	292	- 175
Various other items	739	797	- 58
Total of all items	\$10,045	\$10,054	- 9

sides of the Atlantic, and as far as the reasoning in the case goes, we are about as far from solution as ever. In the post-war settlements, the United States made considerable reductions in the principal of the debts and granted concessions on the rate of interest; but, at that, many of the debtors professed inability to pay.

It ought to be observed that the debt situation throws a side light on international trade policy. We probably would hear much less about the capacity of these nations for payment if the United States would relax its tariff policy. If debts involve a national sacrifice, most na-

¹⁴ Lippincott, *Economic Development of the United States* (3rd ed.), p. 611.

tions would be willing to pay this price in order to gain freer admittance to the huge American consumers' market. With a lower tariff we would consume many millions of dollars worth of European goods. But powerful groups on this side of the Atlantic resist this policy. In other respects, the debtor nations complain that our policy makes it more difficult for them to pay. For example, the development of an American merchant marine, during and after the war, deprives some of the carrier nations of an income for the transportation of American freight. And the Johnson bill, 1934, which prohibits certain classes of loans to debtor nations, is also a handicap upon payment.

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CHAPTER VII

DOMESTIC COMMERCE OF THE UNITED STATES

Although the domestic commerce of all countries is of much more importance than foreign trade, the latter usually receive greater public attention. Possibly one reason is that the business within national borders is taken for granted. Moreover, industrial policies at home are controlled largely by the national legislature, and such policies can be ordered to suit the needs of a people. Not so with foreign relations where commercial intercourse is controlled partly by foreign conceptions as to what the foreign interests are. International clashes are inevitable—a condition which perpetually keeps relations with outsiders to the fore. Then again, foreign trade performs two very useful functions which most people recognize; one is to supply a country with commodities which cannot be produced to the best advantage at home, and the other is to give a nation an opportunity to dispose of surpluses of domestic production. National prosperity is sometimes gravely influenced by the freedom, or lack of freedom, of foreign markets.

Rise of Domestic Markets

Many communities in the United States began their existence as self-sustaining organizations, and they remained so until transportation of some kind gave them access to more distant settlements. The first inter-regional commerce was usually composed of articles which contained a high value in a small bulk. This was one reason why the fur trade was once an important division of our inland commerce. In the early days of settlement, unless communities were on or near the waterways there was no possibility of shipping commodities to distant markets. This meant that for all except a few regions thus favored there was no trade in products of field, forest, or mines. Until the coming of steam navigation, even this commerce was confined to one direction, namely, down-river.

We may give one illustration of the effect of transportation on commerce: Prior to 1825, wheat from western New York was shipped down the Susquehanna to Baltimore as the cheapest route. The trade of west-

ern New York State did not seek the Hudson because of the prohibitive freight charges. According to a report to the legislature of New York in 1817, the cost of shipment from Buffalo to New York City was \$100 a ton, which was three times the usual market value of wheat, six times that of corn, and twelve times that of oats. Upon the opening of the Erie canal, the rates to New York City fell at once to from \$5.00 to \$13.00, and by 1852, they ranged from \$3.00 to \$7.00. At any time from the first settlement of the western country to about 1826, the charge for transporting a ton of merchandise from Philadelphia to Pittsburgh ranged from \$100 to \$150. Before 1817, it cost as much to bring a similar weight up-river from New Orleans.

The earliest mode of transporting freight and passengers to the Middle West, and to a large extent within the region itself, was with either pack-animals or wagons. The great western gateways were reached almost entirely by land routes. Travel was slow and expensive. In the interior, carriage of any sort, except on the rivers, was a troublesome process. In summer, the roads were in fairly good condition, but in winter and spring, travel was difficult if not impossible. These circumstances increased the importance of the waterways; the earliest hope of commerce throughout the vast area from the Alleghanies to the Rockies was in the improvement of the streams.

Seaboard Markets

Once a beginning had been made, various marketing areas were opened with remarkable rapidity. Historically, the earliest were along the Atlantic seaboard. These were served primarily by coastwise transport; but, in many instances, the river which flowed into the ocean gave access to a hinterland of considerable proportions. Local markets developed in this territory, as in all new communities later on, and these comprehended as much territory as could be reached by the prevailing means of transportation—sometimes the streams, sometimes wagon roads, sometimes merely by trails. At all times, from the earliest settlement, there was trade with the Indians far and near, and this involved, upon occasions, contact with Indians hundreds of miles away.

Under the auspices of the French, traders were already busy in the mid-Mississippi valley before 1700. During this period, settlements were made at a number of places which subsequently rose to considerable importance. From the Ohio and the upper Mississippi and their tributaries furs were dispatched to the Great Lakes and conveyed thence to French gathering points in Canada.

With the conclusion of the French and Indian wars, English traders along the Atlantic enlarged the scope of their activities. About 1763 two important fitting-out places, Albany and Philadelphia, were competing for this traffic. With a stock in trade of beads, gaudy ribbons, hatchets, knives, gunpowder, lead, and poor whiskey, traders from Albany reached Presque Isle, now Erie, Pennsylvania, whence they advanced into Michigan, or proceeded down the Allegheny river to the Ohio. From Philadelphia, the route led over the Susquehanna river at Harrisburg, thence through the Juniata valley, and across the mountains to Pittsburgh, thence down the Ohio. It is interesting to observe that less than a century later, some of the towns on the Missouri river were performing the same function as fitting-out places that Albany and Philadelphia had played at the earlier date.

This early trade with the Indians was the forerunner of settled commerce in all the area from Pittsburgh to the Pacific coast. It left numerous far-reaching results on western history. It found the Indians merely hunters for food and raiment; it put iron and guns into their hands and made them agents in subsequent commercial expansion. It provided a powerful stimulus to exploration, resulting in the discovery of routes over the regions; it brought to light and advertised the richness of the country and thereby attracted immigration. In this manner, a foundation was laid for the development of some of the earliest marketing areas within the country.

The Ohio Valley Area

Of the marketing regions of the interior, the one along the upper Ohio was the first to assume modern characteristics—small shops, factories, mercantile houses, and banking facilities. The leading cities both for manufacture and trade were Pittsburgh, Cincinnati, and Louisville. These places became important industrial centers producing various articles of iron and machinery; engines for steamboats and the vessels themselves; boots, shoes, and clothing, particularly for plantation wear, flour; eventually Cincinnati became the first important meat-packing center in the United States. In time, manufacturing and trading towns began to cluster in the neighborhood of the larger cities, and the marketing area expanded until it included the regions further down the Ohio and the middle and lower Mississippi.

The introduction of the steamboat on western waters in about 1812 proved to be one of the most important events in American commercial history. Hitherto, river trade had been carried mainly by crafts which

could carry cargoes down-stream only. Previous to 1817, about twenty barges, averaging 100 tons each, making but one trip a year, sufficed for the inland commerce from New Orleans. For the most part, these vessels were pulled up-river by cords wrapped around trees on the bank. On the upper Ohio, there were about 150 keel boats of thirty tons each which made the voyage from Pittsburgh to Louisville and return in about two months. Obviously, no great development was possible under these conditions.

Thus, the introduction of the steamboat in 1812 marked the beginning of a new epoch. Still, for upwards of five years, doubts as to the practicability of up-river navigation retarded capital from venturing into the business of boat-building. But this question received a favorable solution in 1817 when the "Washington" made the round trip between Louisville and New Orleans in forty-five days. Forthwith, other boat-builders entered the business. Seven steamboats were constructed in 1817, twenty-five in 1818, and thirty-four in 1819. According to a report to Congress in 1857, upwards of 1,650 steamboats had been built prior to 1849, and there were about 600 in service in 1856.

The significance of this new means of conveyance was not only in its capacity for handling freight, but in its numerous incidental advantages. "Without it," said a western writer, "the Mississippi Valley would have remained long a rich wonder . . . it has contributed more than any single cause, perhaps more than all other causes which have grown out of human skill combined, to advance the prosperity of the West."

An analysis of this statement will show that it contains a large measure of truth. The steamboat increased the speed and convenience of communication and greatly reduced the costs. In consequence, the sale of farm products was no longer restricted to a narrow local market; these commodities now sought distant places where prices were higher and where there was less danger of glut. Perishable articles, too, could be disposed of at considerable distances. As a rule, everything the farmer had to sell commanded a higher price, and the things he bought were obtained at lower prices. His labor yielded a larger return of desirable things, and this stimulated enterprise.

Likewise, the steamboat encouraged westward migration, which led to further development of farming and to the founding of shops and factories; it caused the building up of an important western machine industry; steamboat-building itself became a great new enterprise, and its growth promoted the manufacture of rope, cordage, articles of brass, cabinet work, etc. As with other inventions, therefore, the steamboat not

only contributed a new convenience but led to the founding and development of other industries and acted as a general industrial and commercial stimulant.¹

Some idea of the growing commerce of this interior market area may be obtained from a statement of imports into New Orleans from the interior. Such imports in the year 1814-1815 amounted to \$8,779,000; in 1859-1860 they became \$185,211,000. This, of course, gives only a partial view. After the completion of the Erie canal in 1825 and the subsequent building of other canals in the New West, large volumes of incoming and outgoing cargoes passed directly to the East over these works. Andrews, in a government report, estimated the total commerce of the Mississippi and its tributaries for 1852 at \$339,502,000; adding this to the value of Lake commerce, he obtained \$653,976,000 as the total amount of the commerce of the Mississippi Valley in 1852. Since this was a growth from almost nothing in 1790, it is a truly remarkable record of commercial expansion.

The Great Lakes Market

A third marketing area which rose to great importance during this period was that of the Great Lakes. Prior to 1825, this was one of the most inaccessible regions in the country. Its commerce was composed chiefly of Indian goods moving westward over the Lakes to various distributing points, of furs brought back in return, and of supplies dispatched to the army posts in the Great Lakes region.

Two notable events contributed to the establishment of commerce in its modern aspects in this section. One was the opening of the Erie canal in 1825, and the other was the introduction of steam navigation on the Lakes in 1819.

The general effects of these new means of communication were the same as with the steamboat on the rivers. This region was now opened for enterprise of many descriptions. The villages along the border of the Lakes grew into cities. They became focal points for commodities moving in all directions to an ultimate market. Chicago, which was nothing more than a frontier post in 1825, was a city of 109,200 in 1860. It became a place of debarkation for immigrants destined for settlement in the middle-western territory, and the place through which they marketed much of their products. Large quantities of dry goods, groceries, lumber, products of iron and steel, and farmers' goods of many descriptions were sold from this point. The growth of Buffalo, Cleveland, Detroit, Toledo

¹ Lippincott, *Economic Development of the United States*, 3rd ed., p. 264.

was also stimulated by the new outlets to market. A brief summary of the advance in commercial importance of this area is contained in a statement of the tonnage on the Great Lakes. This amounted to 5,890 tons in 1829 and to 436,500 tons in 1860.

Far-Western Markets

One of the significant features of the period from 1790 to 1860 was the opening of the country west of the Mississippi for trade. As in other fields, fur traders were the forerunners of established commercial intercourse. After 1820, there was added to this far-western field the trade with the old Spanish town of Santa Fé, which ultimately extended far down into Mexico and to the Pacific Coast. There was added, also, trade with the Mormon settlements in Utah, and shortly after 1860, with the new mining camps in the Rocky Mountains. With the discovery of gold in California, the Pacific market began to make an appearance.

For many years, at least during the greater prosperity of the fur trade, much of the commerce of the country beyond the Mississippi was focused upon St. Louis. It was the place from which the traders outfitted, and also the place to which they brought their cargoes. After 1840, with the great expansion of the trade to Santa Fé and to the mountains, some of the towns along the Missouri came into prominence as distributing centers.

During Spanish times, traders had occasionally succeeded in crossing the plains from Santa Fé to the Missouri, and something had been learned about the route of travel. Between 1800 and 1821, several attempts had been made to establish trade between Kaskaskia and St. Louis and the Santa Fé region; but the hostility of the Spanish government proved an insurmountable obstacle. With the success of Mexico in gaining her independence about 1821, a number of adventurers crossed the plains with the result that trade was firmly established between the Southwest and the towns on the Missouri river.

After 1848, the business of supplying the Mormon settlements in Utah, and the new mining camps in Colorado, widened the domain of the overland trade. The discovery of the Gregory Lode in 1859 removed all doubts as to the value of the new mineral resources. Denver, Boulder, and Fountain City, sprang up within a year. The growth of the first named city was amazing. "Whole streets have been built up in less than twelve months with brick and frame edifices," said a journal of the time, "and filled from room to cellar with every production of Anglo-American industry that can possibly be demanded in that mar-

ket." In 1860 the total investment in the commerce of the plains, including wagons, teams, wages of men, but excluding merchandise, was estimated at \$5,545,000. In that year, the merchandise shipped west of the Missouri river was valued at \$10,500,000, distributed as follows: New Mexican trade, \$3,000,000; Pikes' Peak gold region, \$6,000,000; Utah trade, \$500,000; Indian trade, \$1,000,000. Kansas City enjoyed the largest share of this commerce but found competitors in Leavenworth, Atchison, Nebraska City, St. Joseph, and Omaha. Goods were imported into these cities by way of the Missouri river. The building of the Pacific railroads not only added to the commerce of these towns but greatly stimulated trade with the mountains, and with Santa Fé. This growing commerce was carried by wagon freighters until railroads penetrated the territories.²

The Southern Market

The southern marketing area expanded to the West and to the Southwest. In the seaboard colonies, in colonial times, tobacco, rice, and indigo had been the main commercial crops. With the development of cotton, after the introduction of the gin about 1792, this staple supplied the great money income for much of the area south of the Ohio river, although the planters raised a considerable number of crops for local consumption; tobacco in some areas and rice in others still occupied a rather important place in the plantation economy. Southern Louisiana became an important producer of sugar. However, the rise of cotton supplied the chief basis for industry over much of the region.

The westward movement of cotton cultivation wrought great changes in the market. Charleston and Savannah declined in importance, and New Orleans and Mobile rose to first place. The extent to which the cotton trade of New Orleans was stimulated by the southwestward migration is indicated by the fact that receipts from regions tributary to this city increased fourfold in the years from 1830 to 1850. Memphis owed her growth as a cotton market largely to the building of railroads which made possible the exploitation of the inland country. More than three-fourths of the receipts of this city in 1859 came by rail. Most of this cotton, however, ultimately found its way to New Orleans. A portion of the crop of the northern cotton states supplied factories at St. Louis and a few cities on the Ohio river, notably Pittsburgh and Cincinnati.

The average annual exports of cotton from New Orleans were about

² Lippincott, *op. cit.*, p. 268.

206,000 bales during the years from 1822 to 1830. They were about 1,579,000 bales for the decade ending 1860. New Orleans not only received more cotton than any other city in the United States, but at times, after 1840, more than all the other places combined. Since the cotton exports from New Orleans came from up-river, it is evident that the cotton trade was a large factor in the commercial relations of that city with the interior. In fact, out of total imports into New Orleans from the interior, estimated at \$185,211,000 for 1860, cotton contributed \$109,389,000.³

In the course of time, an intimate commercial relation developed between much of the plantation area and the manufacturing regions along the upper Ohio. The plantations produced large quantities of food and feed stuffs, in many instances enough for home consumption. Sweet potatoes were an important crop. In 1860, Georgia was the largest producer in the Union, and large quantities were grown in other southern states; this was true also of peas and beans; the southern states were also large producers of corn, and some regions grew sizable amounts of wheat.

But the southern states obtained from the region north of the Ohio considerable quantities of flour and pork products. They also took many manufactured goods, including fabricated iron, agricultural implements, castings, steam engines, sugar mills, hardware, drygoods, hats, drugs, fancy goods, harness, soap and candles, harness and saddlery. About 1860 it was said that "all the principal hotels in Memphis, Nashville, Mobile, and New Orleans have been furnished with bedsteads from this factory" (in Cincinnati.) And it was claimed that this city was the great mart for ready made clothing for the "whole South and West."⁴

Overlapping Markets

While it is true that certain regions were looked upon as "natural" marketing areas, these territories were by no means self-sustaining markets. In all cases, they produced surpluses which sought sale in more or less distant areas; and, on the other hand, goods consumed in these areas were obtained from many sources. The manufacturing and commercial cities along the seaboard enjoyed trade, either directly or through various and devious channels, with practically all of the United States. In like manner, the regions of the Middle-West and South, although in

³ Lippincott, *op. cit.*, p. 188.

⁴ Charles Cist, *Cincinnati in 1851* (Wm. H. Moore and Company, Cincinnati, 1851), pp. 184, 193.

some instances they contained considerable manufacturing enterprises, were still dependent upon more distant sources for goods which they themselves did not produce. Also, the country in the South and West was largely agricultural; it produced great surpluses of wheat, meat products, cotton, tobacco, sugar, and many other products for which it was necessary to find distant markets.

Nor was this all. Changes in modes of transportation continually disrupted marketing areas—a condition which exists even at the present time. To give only one example: before the buildings of canals and railroads, the commerce of the interior followed the channels of the rivers; but with the completion of the Erie and other canals, and notably after the construction of roads to the Mississippi, trade began to flow in great volumes from east to west, and in the reverse direction. In like manner, at one time the river cities of the interior counted upon the whole Mississippi valley as their domain, but this was changed with the advent of railroads.

Development of Domestic Trade Since 1860

Two of the most significant facts in the expansion of the American market are first, the freedom of the home market and second, the appearance of a diversified and extensive system of transportation.

The first feature is either directly or indirectly a cause of various industrial, as well as marketing, advantages. There are no customs barriers within our borders. Commerce flows over the country freely without the handicaps of tariffs or imposts. This is in marked contrast with conditions on the continent of Europe where the flow of goods is interrupted by customs arrangements.

An important outcome of the freedom of the American market is that enterprises can be located in regions which offer the greatest natural, or other, advantages. Here, the law of comparative costs operates with the minimum of friction. The various sections are engaged in the enterprises for which they are best adapted. Presumably, the cost of production in such regions is lower than if industry had been stimulated by some artificial device, like a tariff. The principles of localization of industry are, therefore, more extensively applied in our market than in any other place in the world. Possibly, also, this not only reduces the cost of production and distribution but provides for a wide spread of purchasing power and well-being. Further, tariffs are usually a burden upon the consumer, reducing the purchasing power of his income, limiting purchases, and curtailing demand.

The development of communication has made it possible to realize the advantages of a free market. The present transportation system is the result of an evolution which depended for its driving force mainly upon the progress of invention and discovery. Along the way were such transportation means as pack-men, pack-animals, wheeled vehicles of many descriptions, and on the streams canoes, barges, keel-boats and flat-boats. Then, shortly after 1800, men began to experiment with steam-power both for land and water transportation. With this, the new era definitely made its appearance. After many experiments the steamboat was introduced on the Hudson river in 1807, on the Ohio-Mississippi river system in 1811-1812, on the Great Lakes in 1819, and the first ship using auxiliary steam crossed the Atlantic in 1819. The era of railroad building in the modern sense began in the United States on July 4, 1828, when Charles Carroll of Carrollton, Maryland, laid the corner stone of the Baltimore and Ohio.

In the United States, the railroad-builders constantly set for themselves more distant objectives, always with wider markets in view. Competition among commercial centers was severe, and each tried to attract to itself the commerce of as wide a hinterland as possible. Hence, the enterprise of all the leading seaboard cities was concerned with railroad-building. After the faith of the river cities had been shaken in the superiority of waterways over railroads, their merchants, also, were attracted to elaborate schemes of railway construction. This was true of St. Louis, Memphis, New Orleans, and of the cities on the Ohio river. The people in all these places were compelled to invest large amounts of capital in the new means of transportation. The outcome of this rivalry, both among the seaboard cities and among those of the Mississippi valley, was a rapid extension of the railroad system.⁵

Within thirty years after the beginning of the Baltimore and Ohio, the first great objective had been obtained—the tapping of the commerce of the Ohio river and of the Great Lakes. By 1860, roads had been built radiating from Lake Erie and Lake Michigan touching the Mississippi at ten places and the Ohio at eight. Meanwhile, the Baltimore and Ohio reached Wheeling in 1853, the New York and Erie was constructed to Dunkirk in 1851, and the Pennsylvania began to run through trains to Pittsburgh in 1852. Thus the first goal had been attained. With no great barriers to cross, the attainment of the next goal—the rich commerce of the Mississippi river—was only a matter of a decade, particularly since many short lines had been constructed in the intervening

⁵ Lippincott, *op. cit.*, pp. 247 ff.

area. With the completion of the first transcontinental railroad in 1869, the consummation of the third and fourth goals—the Rocky Mountain trade, and that of the Pacific—became a possibility.

In 1860, the railway mileage of the country was about 30,600. It increased to about 250,000 miles in 1930.⁶ The additions, however, were unequally distributed. The region west of the Mississippi was the chief beneficiary. The length of line in this section increased from 1,840 miles in 1860 to about 114,460 in 1910. Mileage in New England scarcely doubled during this period; in the Middle and North Central sections the increase was about four-fold. Until about 1880, when economic activities began to recover from the shock of the Civil War, the South had been largely neglected by railroad-builders. But a change took place with the opening of its greater resources—farming, mining, lumbering, and the production of petroleum. In 1930, this section contained about 25 per cent of the total mileage of the country.

Since 1860, there has been a notable improvement and diversification of the transport system of this country. Notwithstanding the decline of river traffic, particularly since 1880, large sums have been expended in improving the streams. Harbors, both on the Great Lakes and on all our seacoasts, have been developed to meet modern shipping conditions; and, particularly since 1900, the country has embarked on a huge road-building program. In 1934 the total mileage of all types of roads was over 3,000,000. Of this, the surfaced roads were over 700,000 miles, almost a two-fold increase compared with the prior decade.

Other forms of communication, so necessary for commercial development, have been greatly extended during the last half-century. The telegraph was already in existence before 1860, although its real development had hardly begun. The introduction of the telephone on a commercial scale belongs to the decade from 1880 to 1890; the first commercialization of the wireless was a feature of the decade from 1900 to 1910; the radio is largely a creature of the decade from 1920 to 1930; this is true also of air travel, although much of the pioneering work, including the development of the plane for war purposes, had been done in the previous ten years. Meanwhile, the extension of electric trolleys, the successor to the cable and horse- or mule-drawn street car, dates from the years 1890 to 1900.

Although new forms of freighting have appeared, the railroad still occupies the preëminent position as a transportation agency. Convey-

⁶ This is for "miles of road, first track owned." In addition, the yard tracks and sidings, and other main tracks, bring the total to about 430,000 miles.

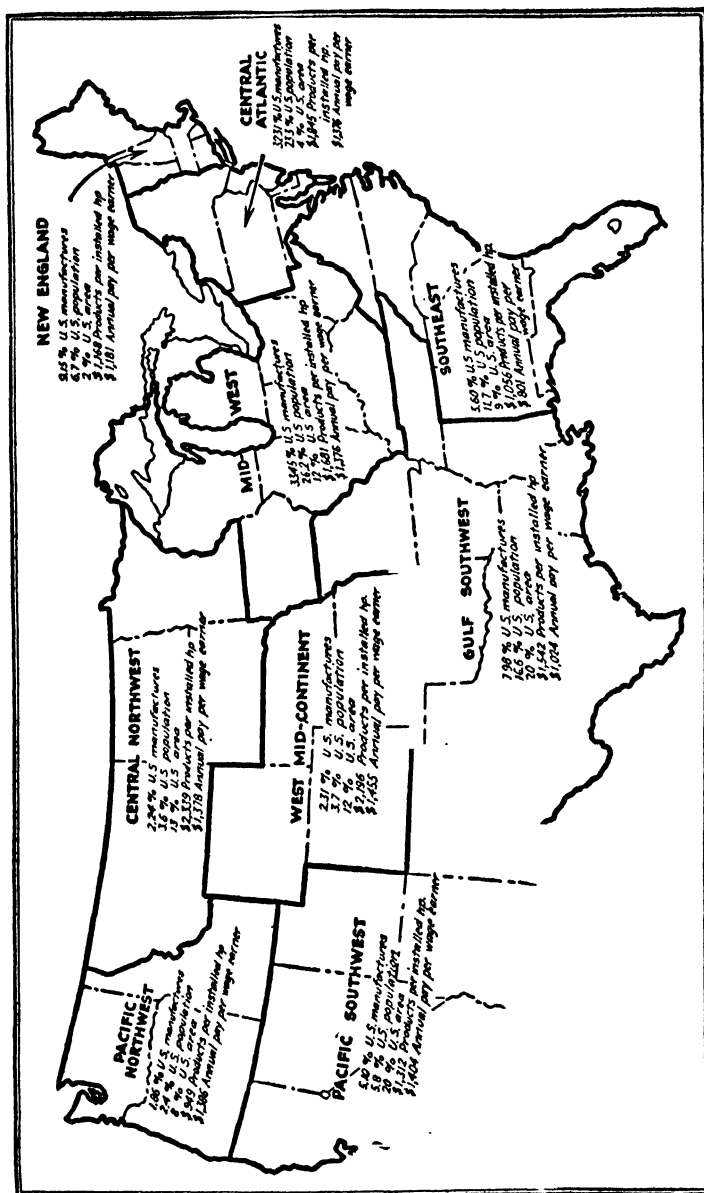


FIG. 7. A REGIONAL SURVEY OF PRODUCTION

Courtesy of the "Business Week"

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ance of freight over roads has created problems for the railways, and affected somewhat the development of local markets, yet the railroads are now, and probably will continue to be, the chief carriers. The relative importance of the various means of transport are indicated in the table which follows.

TONNAGE OF FREIGHT CARRIED BY VARIOUS AGENCIES; 1930[†]

Railroads	2,179,000,000
Coastwise between ports	117,800,000
Great Lakes, between ports	109,700,000
Local traffic of seaports and Great Lake ports	81,400,000
Traffic between seaports and river points	35,600,000
Traffic on rivers, canals, and connecting channels	132,000,000
Total	2,655,500,000

Movements of Freight within the United States

The movements of freight within the United States are determined largely by regional specialization of occupations, and this in turn is dominated by the various factors which go to make up the advantage of carrying on industry in given areas. While practically every section contains manufactories of some description, the greater factory enterprises are in the New England, Central Atlantic, and Mid-West sections, which, in 1929, reported upwards of 75 per cent of the value of all manufactures. Even in these sections, manufacturing is largely localized in relatively small areas. Those along the border of the Great Lakes, in the upper Ohio Valley, and in a narrow strip along the Atlantic coast from about Lowell, Massachusetts, to Wilmington, Delaware, are representative.

These three sections contain upwards of 56 per cent of the population of the country, but produce a relatively small amount of the foodstuffs and raw materials. This signifies that the incoming freight contains large quantities of these commodities. Raw materials are gathered in from many parts of the country. The upper Mississippi Valley is the main source of foodstuffs. The manufacturing areas are on, or near, the coal fields; they are well supplied with varied types of transportation; the labor supply is abundant and diversified; and the great financial centers are near at hand.

The people of these industrialized areas are large consumers of the

[†] *Statistical Abstract of the United States*, 1932, pp. 377, 399.

products of their own factories. These areas are the largest retail markets in the country. But from these regions flow great quantities of fabricated goods for consumption in practically every town and hamlet in the United States.

Coal and coke constitute the largest item of freight carried on our railroads; manufactured goods rank second; and various output of the mines, other than coal and coke, rank third.

Large quantities of heavy, bulky freight made up chiefly of wheat, cotton, livestock, fruits, and the partly or completely finished manufactures of these stuffs, originate in all the agricultural areas. These are transported to the great consuming and manufacturing areas. Upwards of 70 per cent of the agricultural freight carried by Class 1 railroads is in the Western district of the United States, about 20 per cent in the Eastern district, and the remainder in the Southern district.⁸ The distribution of the carriage of animals and animal products is in about the same proportions.

Of the mineral products, coal, coke, and petroleum supply the largest volume of tonnage. Upwards of 50 per cent of the coal and coke carried on the railroads is in the Eastern district, about 35 per cent in the Southern, and the remainder in the Western district. Of forest products, about 60 per cent is transported in the Western district and 30 per cent in the Southern. These statements represent roughly the origin of these various types of freight.

The yearly average of different classes of materials carried by Class 1 railroads, covering the period from 1926 to 1930, is shown below.

REVENUE FREIGHT CARRIED, CLASS I RAILROADS (TONS OF 2,000 POUNDS) ANNUAL AVERAGE 1926-1930	
Coal and coke	852,777,000
Manufactures and miscellaneous	646,671,000
Products of mines (other than coal and coke)	395,987,000
Products of agriculture	221,019,000
Products of forests	179,554,000
Animals and animal products	45,054,000
Total	2,341,062,000

⁸ The divisions given by the Interstate Commerce Commission are as follows: "Broadly speaking, the Eastern district includes territory east of Chicago and north of the Ohio and Potomac rivers; Southern district, territory east of the Mississippi and south of the Ohio and Potomac; and the Western district the remainder of the country." The Commission divides the railroads into three classes. Class I comprehends those with gross operating revenue of more than \$1,000,000 a year. *Statistical Abstract of the United States*, 1932, p. 365.

Retail Markets

A market is composed not only of numbers of potential consumers, but of consumers taken in relation to purchasing power. In this respect, the greatest retail markets are in the Middle Atlantic, East North Central, and West North Central divisions, named in the order of their importance.⁹ About 58 per cent of all the goods sold at retail are disposed of in these sections. This is shown in greater detail in the table below.

RETAIL DISTRIBUTION BY GEOGRAPHICAL DIVISIONS; 1929 ¹⁰

	NET SALES	PER CENT OF TOTAL
New England	\$ 3,785,868,614	7.71
Middle Atlantic	12,717,898,921	25.90
East North Central	11,262,958,267	22.93
West North Central	5,269,553,456	10.73
South Atlantic ..	4,201,755,236	8.55
East South Central	2,171,994,949	4.42
West South Central	3,727,371,380	7.59
Mountain	1,548,650,433	3.15
Pacific	4,428,602,013	9.02
Total	\$49,114,653,269	100.00

Water-borne Traffic

As already indicated, the railroads are the most important means of transportation; but considerable quantities of freight are carried on the various waterways. The federal and, in some instances, state governments have expended large sums for the development of water communication, but, with the exception of the Panama and Sault Ste. Marie canals, the outlay has hardly been warranted by the traffic results. In 1903, the State of New York authorized the expenditure of \$100,000,000 for the widening and deepening of the Erie, Oswego, and Champlain canals. Subsequently, appropriations both for construction and maintenance made great additions to the original sum. The largest amount of freight carried on the New York works was during the five year period ending with 1870 when it was nearly 6,000,000 tons. It has never since equaled that figure. In fact, in spite of the improvements, the average tonnage for the five years ending 1930 was only 2,900,000.

⁹ The Middle Atlantic division includes New York, Pennsylvania and New Jersey; the East North Central—Ohio, Indiana, Illinois, Wisconsin and Michigan; the West North Central—the Dakotas, Nebraska, Kansas, Minnesota, Iowa and Missouri.

¹⁰ *Fifteenth Census of the United States*, "Distribution," Vol. I, Pt. I, p. 50.

The history of the Sault Ste. Marie canal presents quite a different story. This artery is one of the great means of communication with the Middle-Northwest. The freight carried has frequently exceeded 90,000,000 tons. Through this channel are brought down, chiefly for distribution to the lake ports, iron ore, lumber, flour, wheat and other grains, and small quantities of stone, copper, and general merchandise. Coal is the chief item in the west-bound traffic. The freight movements are by no means equal; the cargoes coming east are sometimes three or four times greater than those moving up the lakes.

While the tonnage passing through the Panama canal is usually less than half that which moves through the Soo, this channel serves a far greater area and is of great value in communication between the two coasts of the United States, not to mention its service in facilitating trade between the east coast of North America and the west coast of the southern continent. A considerable amount of freight from both the United States and Europe destined for Asia, and in the reverse direction, moves through this waterway.

The international character of this canal is revealed by the fact that in 1934 the vessels of at least twelve nations passed through its locks. The freight that moves from the Pacific to the Atlantic is usually more than double that which moves from the Atlantic to the Pacific. By far the greater quantities of the cargoes which pass through this channel are distributed between the two coasts of the United States, although smaller amounts reach their final destination in Canada, the west-coast countries of South America, and in Asia and Oceania.

Much less can be said of the importance of the river trade. The traffic along the Ohio and Mississippi is the most significant of all our streams. Until about 1880, the packet business was an important part of river transportation; but with the completion of the major railroad plans, most of this freight has been transferred to the freight car. What remains for the rivers is mostly heavy, bulky stuffs which often require a low freight rate, and which can move slowly to market. The Ohio, which at one time enjoyed a large packet business, now carries only insignificant quantities of groceries, grain, flour, and dry goods. Over 90 per cent of the traffic is composed of coal, coke, sand and gravel, stone, ores and metals, and machinery. The down-river trade is about double that which moves up-stream.

The most important division of the Mississippi river traffic is between Vicksburg and New Orleans; over this section petroleum and its products constitute nearly 90 per cent of the freight. On all the divisions are

carried small quantities of sugar, logs, cement, coal and coke, among other commodities.

In recent years, chiefly under the ægis of the federal government, attempts have been made to restore a measure of importance to river transportation. Because of the congestion of the railroads during the war, the national government made as large use as possible of the rivers, and, in a measure, the Inland Waterways Corporation is heir to the government enterprise. The merits and defects of barge transportation have been the subject of heated debate. Critics point to the "hidden costs," such as interest on the government investment, administration expenses, exemption from taxes, and failure to charge-off adequate depreciation, as proof of the unprofitableness of the enterprise. The proponents, on the other hand, look to the future and insist that when the system is completely developed, it can operate on lower rates than the railroads, and that it will promote the prosperity of the Mississippi valley.¹¹

Coastwise Traffic

Coastwise shipping is an important branch of the national transportation system. The United States is favored with a long coast line, on both the Atlantic and Pacific oceans. The Atlantic, particularly, has the advantage of a considerable number of good harbors. Transportation interests have made large use of these facilities. The tonnage engaged in this branch of transportation has been increasing since 1840, indicating a gradual increase in importance of this means of communication. It was 10,200,000 tons in 1931.

Although the figures indicate a growing use of these waterways, coastwise transportation, like river transportation, is probably of less relative importance to-day than some forty years ago. In most cases, railroads now parallel the coast, and for some classes of traffic, offer a more satisfactory means of transportation than does the ocean.

Marketing Methods

Of necessity, the methods of passing goods on from fabricators to ultimate consumers have changed with the developing character of domestic business. Some fifty or sixty years ago the manufacturer adhered closely to the business of fashioning goods and left the task of marketing to merchants who, at that time, were better organized to bring the products to the attention of final consumers. The customary

¹¹ Lippincott, *op. cit.*, p. 537.

route to market was from manufacturer to wholesaler, who assembled goods from many sources, to retailers, who administered to more or less local needs; and thence to final consumers. Occasionally, brokers, commission men, eveners of some description, intervened to interrupt the standard process, but their activity was more the exception than the rule.

With the concentration of many kinds of businesses in large establishments, notably since 1880, and the diversified development of the transportation and communication systems, including railroads and water travel, telegraph, and more recently the telephone and motor communication, plus the development of the art of advertising, phenomenal (some would say chaotic) changes have occurred in methods of marketing. There is considerable merit in the contention that marketing processes are in confusion, and it is true that in many lines the cost of selling exceeds that of manufacture.

The tendency in recent years has been to sell more and more directly from producer to final consumer; that is, to eliminate middlemen. The evolution is complex. Sometimes merchants, whose businesses have grown to large size due to all the stimulating effects of modern industrial growth, have gone into some lines of manufacture; the middleman has been eliminated in these lines by the distributor's extending his operations backward into the field of manufacture. On the other hand, large manufacturers, in many cases, have gone into the business of retail merchandising; that is, the producer has extended his operations forward so as to reach the final consumer without the intervention of the middleman. Many variations of these lines of development could be found.

Conditions of modern selling make these changes necessary. Competition, which narrows the margin of profit, encourages dispensing as far as possible with all market operations which increase cost. Moreover, in the face of competition, manufacturers are eager to gain control over their final consumers' market: this enables them to obtain better results from advertising, to push their goods, to develop good will, and to escape the whims of some middlemen. The results of the new methods are to reduce risks, to obtain a more accurate knowledge of final markets, to render better service to consumers, and both to increase profits and to insure success. The chain store, the branch store, the mail-order business, and the department store are largely an outgrowth of these conditions.¹²

Of these, the chain store is probably the most characteristic of American selling institutions. It has invaded practically every field of mer-

¹² Lippincott, *op. cit.*, p. 589.

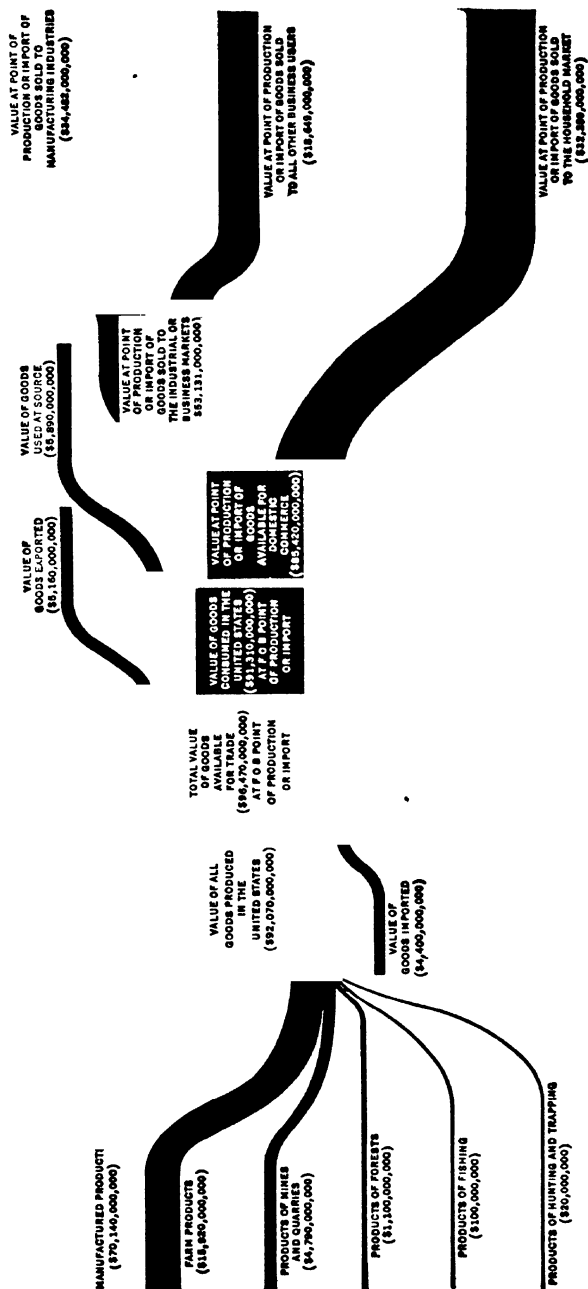


FIG. 8. DISTRIBUTION OF THE PRODUCTS OF AMERICAN INDUSTRY, 1929

Bureau of Industrial Marketing

chandising. It includes food-product groups, general merchandise, apparel, automobiles, furniture and household goods, restaurant supplies, and lumber and building materials, to say nothing of groups of minor importance. In 1930, when the last census was taken, there were over 7,060 chains selling wares in the United States. They controlled over 159,000 stores, with total net sales amounting to over \$10,700,000,000, which was about 21 per cent of the total retail sales.¹³

Value of Domestic Commerce

What constitutes commerce is largely a matter of definition. If we urge that the term means buying and selling, we must include services of all descriptions, because these, also, are bought and sold. The enumerations, whether by government or private organizations, cover chiefly the purchase and sale of merchandise. But we know, at least in a general way, that vast sums of money pass in other types of business transactions such as dealing in real estate, the purchase and sale of securities, entrance charges to places of entertainment, repairs on homes and automobiles, to mention only a few of the items in this class of outlay. All these involve compensation to someone—payment from one person to another. We may confine our statement to businesses that are susceptible of rather easy enumeration. This is given below.

VALUE OF BUSINESS IN VARIOUS LINES; 1929¹⁴

Manufactures—value of the product	\$70,000,000,000
Farming	12,000,000,000
Mines and quarries	5,800,000,000
Wholesale business	70,000,000,000
Retail business	53,000,000,000
Foreign trade (imports and exports)	9,600,000,000
Hotel business	1,000,000,000

These figures contain various duplications, and, as suggested above, they do not include all the transactions which might be classified as commerce. But, at least, they convey some idea as to the magnitude of the domestic business.

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¹³ *Fifteenth Census of the United States*, "Distribution," Vol. I, p. 30.

¹⁴ Lippincott, *op. cit.*, p. 603.

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CHAPTER VIII

COMMERCE OF THE UNITED KINGDOM

Before the depression fell upon the world in 1929, the total foreign commerce of the United Kingdom, including imports and exports, was slightly in excess of \$10,000,000,000. This was a larger sum than was credited to any other nation. As with all industrialized countries, the era of greatest expansion dates from about 1880. At any rate, the total value of the foreign trade in 1791 was only \$174,960,000; it was \$3,314,520,000 in 1873, and \$6,821,010,000 in 1913.

The Preliminaries of Modern Expansion

The beginnings of industrialization which paved the way for the developments of our times had their inception at an earlier date in Britain than in other European countries. Many factors were involved. For one thing, the British Islands enjoyed a number of advantages which were not shared by the nations of the continent. None the least of these was her isolated position. The narrow strip of water which separates the islands from the continent protected these people from devastating military invasions and saved much of the expense of military preparedness. Time and money, which would otherwise have been necessary for war-like affairs, were devoted to industry and commerce.

Moreover, at an early date, the country adopted the policy, which was carried out consistently, of encouraging artisans from the continent to settle in England. Such persons brought the knowledge of new trades and crafts and helped to diversify industries. For over a century prior to the opening of the modern commercial era, the country had been accumulating capital as a result of successful manufacture and foreign trade. Even as early as the latter part of the seventeenth century, a beginning was made in the building up of a commercial organization which not only attracted commerce to the home country but served to hold it in the old channels when faced with the more severe competition of later times. Home capital was invested in the establishment of foreign commercial factories, in the development of colonies, in the

establishment of shipping, and subsequently in provisions for various commercial facilities in many parts of the world.

In addition, Britain was the earliest home of some of the most important mechanical inventions. Here the greater productivity of the factory system enhanced the opportunities for rapid accumulation of wealth and for the development of trade. More and more capital was invested abroad; distant resources were developed; successful efforts were made to expand the markets with which the home country came in contact; home industry was stimulated to absorb an increasing amount of foreign raw materials.

Summarizing these events one authority made the following comments:

The powers of production had been greatly increased by a brilliant development of mechanical arts and inventions. The United States had grown into a commercial nation of the first rank. The European colonies and settlements were being extended, and assiduously cultivated, and were opening larger and more varied markets for manufactures. In 1819 the first steamboat crossed the Atlantic from New York to Liverpool, and a similar adventure was accomplished from England to India in 1825, events in themselves the harbingers of a new era in trade. There began also to be signs, in the general prominence given to the study of economic principles, and in the policy of Mr. Huskisson in England, of a growing public opinion in favor of greater freedom of trade; and China, after many efforts, was opened under treaty to an intercourse with foreign nations which was soon to attain surprising dimensions. These various causes supported the activity of commerce in the first four decades; but the great movement which has made the century so remarkable was chiefly disclosed in practical results from about 1840.¹

Causes of Growth

The position of this country among the trading nations, whether considered from present status or as a process of development, cannot be adequately explained on the basis of geographical position or of industrial resources. With respect to the latter, in the early years of industrial growth, England was fairly well supplied with the essential materials for manufacture. But this condition has passed away. In fact, increasing industrialization has made the country more and more dependent on the outside world for raw materials, and of course, much more dependent than in former years for an external market in which to sell the

¹ *Encyclopædia Britannica*, 9th ed., Vol. VI, p. 204.

great quantities of goods which her shops and workmen can produce.

To-day, coal is about the only resource that is adequate to her needs. Iron ore, here, as elsewhere, is a vanishing resource; of the other metals—copper, lead, zinc, to say nothing of the rarer base metals, now so essential in the metal industries—her mines contain only small quantities, or none at all. A similar statement applies to the textile fibers. The islands produce no cotton, which is now the basis for the most important division of industries; and domestic production of wool provides only about one-third local manufacturing needs. Thus we may propose the question: How can a country with only one great resource, her coal, which must depend on the outside world for varying quantities of all the other, and which does not produce foodstuffs enough to feed her people, rank among the three most important commercial and manufacturing nations?

The Industrial Revolution

For one thing, Britain obtained an early advantage by being among the first to introduce mechanical methods of production. Indeed, many of the earliest modern inventions originated in this country. The change from the old to the new industrial order began to take place shortly after 1750. The spirit of discovery was in the air, although it did not begin to produce material results until 1764, when a Blackburn carpenter, James Hargreaves, developed the idea of spindles attached to a frame and operated from a common source of power.

Apparently Hargreaves did not comprehend the full possibilities of his invention because he attached to the frame only a small number of spindles, but his competitors soon began to add to the number. In 1769, Richard Arkwright devised a somewhat more successful machine based upon a principle which had been conceived some twenty years before by Lewis Paul and John Wyatt. This new invention combined the processes of drawing and spinning, and produced a stronger yarn, with the result that the manufacture of goods entirely from cotton now became a commercial possibility. The drawing was performed by several pairs of rollers, each forward pair revolving at a greater velocity than the set preceding. The cotton was then passed on for twisting into yarn.

In 1779, Samuel Crompton, combined the water frame of Arkwright with the spinning jenny, with the result that the new device produced a much finer yarn. The groundwork of basic improvements had now been laid in the spinning branch of the textile industry.

Shortly, weaving came in for attention. In 1785, Edmund Cartwright

paved the way for the invention of the power loom. His own device was hardly practicable; but subsequent workers improved upon the idea, and the power loom came into general use after 1813. It is significant for the course of future development that these discoveries were made in a field in which Britain subsequently became supreme. To-day, the manufacture of cottons is the leading factory industry. In 1932, the United Kingdom had 51,900,000 spindles, or about 32 per cent of the total for the world. The United States, the nearest competitor, contained 31,700,000, or about 20 per cent. Japan, which has recently come forward as a severe competitor, particularly in the Far-Eastern markets, had only 7,700,000 spindles in 1932.² The commanding position of Britain in the manufacture of cotton textiles is evident from this data.

One of the most interesting features of this era of invention, at least in cotton machinery, and one, by the way which shatters some of our theories, was that only one of these epoch-making improvements came from the brain of a man who was a spinner by occupation, namely, Crompton. Arkwright seemed to have been a rolling-stone, but at one time he was a barber and a peddler of wigs; Cartwright was a clergyman, and Hargreaves a carpenter.

Another interesting feature was that the inventions applied to cotton, which at the time was a minor textile fiber. But the effect was to bring this material forward as the most important material. The cotton gin, invented by Eli Whitney, was a leading step in this sequence of improvements. While each inventor is entitled to full credit for his achievements, the total outcome was largely the result of an association, or exchange of ideas, by means of which one worker obtained suggestions from what had been accomplished by others. In other words, inventions are both cause and effect of progress, and this was true of many minor improvements.

Incidentally, it should be remarked that the development of cotton textile machinery eventually produced a demand for a commodity which now supplies one of the great items of international commerce. The production of cotton throughout the world now usually exceeds 20,000,000 bales a year. In the crop year 1931-1932 it was 27,500,000 bales. At one time, raw cotton provided, in terms of value, more than half the exports of the United States, and it is still one of the important items in our export trade. As far as the production of the crude product is concerned, the United States has been the chief beneficiary of the invention of the gin and other textile machinery. But other sections of the world

² Figures include both active and idle spindles.

receive a large annual income from the export of cotton. This is true of Egypt, and to some extent of India and China. In recent years Argentina, Brazil, Uganda, and the Sudan, have been producing increasing quantities for export.

Other inventions, than those named above, improved the processes in the textile industries. As early as 1748, Paul had devised a method of carding or paralleling cotton fibers by machinery. Various workers invented machines to replace hand-combing of wool. "In 1783 a Scotchman named Bell superseded the old method of printing calicoes by hand-blocks, and increased the rate of production a hundredfold; the new cotton machines were adapted to the linen and woollen trades; improvements were made in the hosiery manufacture and in 1808 Joseph Heathcoat patented a machine for the making of lace."⁸

Moreover, all this was merely an introduction to an era of greater invention. The new discoveries covered the field of iron, and subsequently, steel; and more important still methods of land and water transportation, and the use of steam-power not only for transport purposes, but for operating factory machinery.

England gained a marked advantage over its competitors because these inventions were first developed in this country. In a brief period, the economic organization adjusted itself to the changes and picked up both commercial and industrial momentum. It became necessary to develop foreign markets more vigorously, and in this work, the reduced cost of production by mechanical means gave England new opportunities which her competitors did not possess.

To-day, industrial nations export machinery even to their competitors; but in the early years of the industrial revolution, England sought to retain a monopoly of the inventions by prohibiting export. This was a futile policy for two reasons: actual knowledge of these inventions was smuggled into other countries in one way or another. In the second place, the mere knowledge that English inventors were working on certain ideas stimulated inventors elsewhere to similar endeavors. Even the spirit of invention in one country led to emulation elsewhere. For example, a number of Americans were trying to perfect steam engines at the time Watt was laboring with his inventions; and subsequently, the tubular boiler was devised almost contemporaneously in several countries.

⁸ F. W. Tickner, *Social and Industrial History of England* (Longmans, Green and Co., 1915), p. 517.

Colonial Possessions

Notwithstanding its theoretical aspects, free trade as a national policy has had little attraction for the nations of the world. Since medieval times, most countries have imposed some kind of restrictions of exports and imports, and this seems to be the prevailing attitude to-day. Britain adopted a free trade policy about 1850, and adhered to it rather rigidly until, as an outcome of the late war, various protective measures were adopted. When practically all the world puts restrictions on commerce, one way of expanding trade is to obtain it by the development of controlled territory.

Under the old mercantile doctrine, colonies were supposed to have performed a two-fold function: first, and probably the most important, was to provide a market for goods which the parent country could not consume; and second, to supply raw materials for the manufactures of the home country. In actual practice, this theory encounters various limitations. Under the British system of colonial administration the major divisions of the empire have become self-governing, and as a result, they largely determine their own domestic and foreign commercial policy. But, at that, through the years, Britain has obtained an enormous advantage through trade with her extensive dominions. Whatever their attitude towards nations outside the Empire, the Empire nations have usually made concessions to British products in the form of such trade preferences as preferential tariffs, a condition which sometimes gives the home country an advantage.

But there are more potent factors involved than trade preferences. The capitalists of Britain have invested large sums in the dominions for the development of many kinds of economic activities—sometimes for the building of railroads, improving of ports and harbors, and establishing of credit institutions; and sometimes in the opening of plantations, and the development of various kinds of industries. This helping hand has been a great factor in the increase of economic enterprise in regions which otherwise might have remained backward for many years. It has developed productive activities, increased wealth, and made possible a large consumption of both domestic and Empire goods. Nor is this all: the interest, and in time, the principal on these investments are returned to the home country, usually in the form of commodities. Thus, whatever the tariff policy might have been, the investments have achieved the purpose of promoting trade; that is to say, of encouraging exports from

Britain, and from the dominions, usually in the form of raw materials.

Compared with her greater rivals—Spain, France, Portugal, and Holland—England entered the field of colonial development rather late. It was necessary first, to put her domestic political affairs in order. Beginning about 1553, when the Russian Company was organized, there was considerable activity in bringing trade companies and eventually colonizing bodies into existence. The Levant Company was formed in 1581, and in 1600 appeared the East India Company, whose enterprises overshadowed all the others. The beginning of English enterprise in America dates from about 1606, with the formation of two companies—the London or Virginia Company for the development of the southern shores of North America, and the Plymouth Company, whose interests were further north. Students of American history are familiar with the outcome of these ventures.

Meanwhile, certain foundations were established in the West Indies which, in the course of time, developed into considerable colonial holdings. As a result of contests with the Dutch, a small foothold was obtained in South Africa in the period from 1794 to 1806, when, at the latter date, the British were confirmed in their claims. The great continent of Australia had been discovered during the earlier exploits of the traders in the Far East; but little was known about it. The Dutch were among the first to make superficial exploration, but their interest flagged after various wars with England. The mantle then fell upon English sailors. During the years 1769–1774, Captain Cook examined portions of the continent, and his explorations were followed by others; but to the observers of the time Australia was a forbidding country. It was a “dry and thirsty land where sailors became ‘scorbutick’ looking in vain for water; it offered no riches for trade such as could be found easily in the Spice Islands.”⁴ Subsequent development told a different story.

In most instances these possessions, in the earliest years of acquisition, were nothing more than “toe-holds” on vast territories. But subsequent colonization and conquest from rivals enlarged them into great dominions. The outcome is the British Empire of to-day covering something in excess of 11,000,000 square miles and containing over 400,000,000 people. It includes several large self-governing dominions such as Canada, the Union of South Africa, and the Commonwealth of Australia, and many smaller holdings administered under various systems.

⁴ C. S. S. Higham, *History of the British Empire* (Longmans, Green and Co., London, 1921), p. 104.

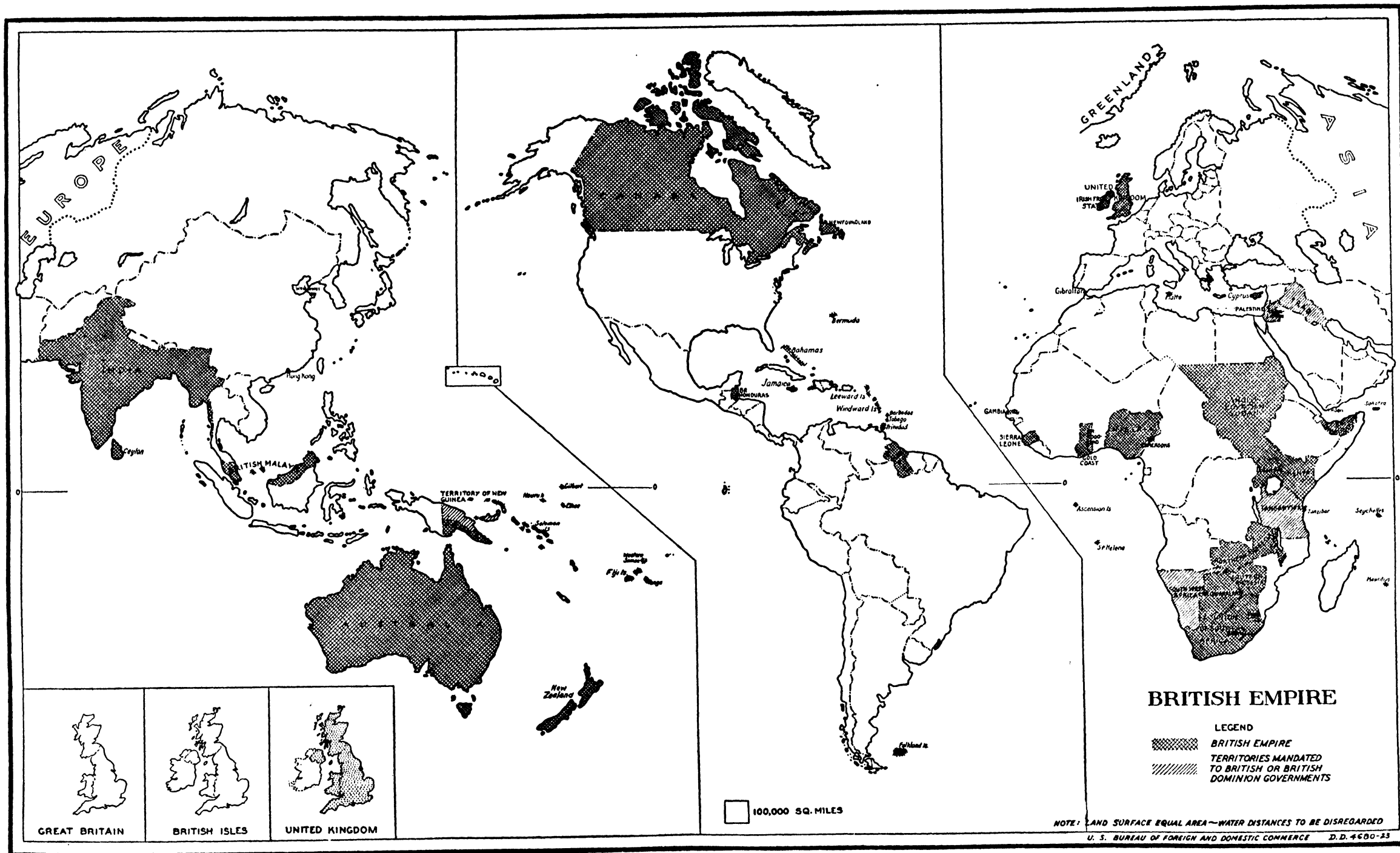


FIG. 9. THE BRITISH EMPIRE

Trade with the Dominions

In some respects the Empire is a league of free nations. But it is by no means a closed organization. The various divisions enjoy a large trade with various parts of the world. It is true, nevertheless, that the United Kingdom has great advantages in commerce with the various parts. These result partly from favors in the treatment of Empire commerce, partly from the orderly governments which the home administration helps to maintain and partly from the great investments of capital which have been used for developmental purposes. Moreover, the great commercial organization which has been in the process of development for several centuries tends to keep trade flowing in its customary channels even in the face of growing competition from the more recently industrialized nations. In recent years, some countries, such as the United States, Japan, and Germany (before the war), have made inroads upon this trade, but Britain still commands the larger portion.

Of the total exports from the United Kingdom in 1932, amounting to over \$1,458,718,000, including the reexports, upwards of \$417,200,000 worth of goods were exported to the larger divisions. On the other hand, of total imports into the United Kingdom the same year, amounting to \$2,465,200,000 about \$676,339,000 were obtained from the same divisions.⁵ Britain has been developing the trade with India for over three centuries, and she has been handsomely rewarded for the effort. In spite of present competition, which includes practically every commodity which enters that market, India is still one of the leading consumers of British goods. In 1913 this country took 13.4 per cent of the total British domestic exports; in 1928, 11.6 per cent; and in 1932, 10.5 per cent, including reexports. In fact, Britain takes either for consumption or for reexport practically everything the dominions have to offer. To this end, her great industrial and trading organization stand her in good stead. It is true, however, that in some instances, goods which were formerly handled through British channels are now moving directly to ultimate consumers. This is the case, notably since the war, with tin, and to some extent with rubber, from Malaya.⁶ The share of the United Kingdom in the commerce of the dominions is shown in the table on page 124.

⁵ *Foreign Trade Yearbook* (Official publication of the United States Department of Commerce), 1933, p. 145.

⁶ Hugh Butler, *The United Kingdom, Trade Promotion Series No. 94* (U. S. Dept. of Commerce), pp. 547, 556.

SHARE OF THE UNITED KINGDOM IN THE COMMERCE OF THE DOMINIONS
(APPROXIMATELY 1930 TO 1933)⁷

	GENERAL IMPORTS	GENERAL EXPORTS
Canada	21.3	38.9
Union of South Africa	45.4	42.1
Australia ..	39.5	49.7
New Zealand	51.2	89.1
Ceylon ..	18.6	49.3
British Malaya	13.6	15.1

The dominions obtain from the home country, by way of imports, a varied assortment of manufactures, of which cotton textiles, machinery, and iron and steel, are the most important. From India the United Kingdom imports tea, raw cotton, crude rubber, raw and manufactured jute, wool, leather, among other products; from Canada, wheat, flour, furs and skins, some copper and lead, wood and timber products, cheese, hams and bacon; from Australia, chiefly raw wool, butter, wheat, frozen lamb, frozen beef, and pig and sheet lead; from the Union of South Africa, various mineral products, and wool, maize, hides and skins; and from British Malaya, rubber, tin, and spices. From various possessions in Asia and Oceania are obtained sugar, sheep and lamb skins, dried dates, coconuts, tea, rubber and tobacco; and from other possessions in Africa raw cocoa, mahogany, cotton, tin ore, palm and palm kernel oil, asbestos, tobacco, coffee, copper, and spices. This trade represents many kinds of products, some of which are consumed within the United Kingdom, but large quantities are reexported to other countries.

With the exception of India, and possibly of Canada, the development of this trade to large values is a matter chiefly of the years since 1880. It is largely a result of the great industrial development in the larger countries which has made necessary a supply of products to meet highly specialized economic needs.

Shipping and Ship-building

Throughout the years ownership of shipping has served several important purposes. One of the most obvious of these is to provide the vessels with which to carry home and dominions commerce. But another important purpose is to provide a source of income to the owners of the shipping and to assist in building up a favorable balance of invisible credits. This income has become of greater significance in the

⁷ It is impossible to obtain latest data for the same years. Canada for 1933, Ceylon and India for 1931; the others for 1932.

last thirty or forty years due to the increasing volume of ocean shipping and to the maintenance of the British share in this business. Thus, for 1907 the net national income for shipping service was estimated at \$413,100,000 annually; for 1927 at \$680,400,000, and for 1928 at \$631,800,000.⁸

Ocean commerce is now carried under the flags of forty or more nations. The British portion of steam and motor vessels in 1932 was about 30 per cent of the total tonnage, and this says nothing of the operation of other classes.

The relation of ocean transport to the whole scheme of British industry and trade is indicated in the following statement:

"From the point of view of service to other industries, the importance of the adequacy of the service can not be too strongly stressed. Great Britain, with an island population of 45,000,000, provides only sufficient domestic foodstuffs to feed this population for two days out of five for bread and two out of seven for all foodstuffs. In order to pay for these vital imports, Great Britain must export coal, iron and steel, and other manufactured products. During the three years 1924-1926 imported merchandise entered Great Britain to the average value of £1,280,000,000 per annum, and visible exports (including reexports) of merchandise during the same period averaged £882,000,000 yearly in value, to which should be added invisible exports consisting of services performed by shipping, banking, etc., and interest on foreign investments. During these three years, 73 per cent of the value of imports represented food and raw materials for industry, and nearly 80 per cent of the value of exports represented manufactured goods, but 75 per cent of the volume represented coal—all sea-borne."⁹

Ship-construction is one of the great enterprises in Britain. Throughout the centuries it has been one of the leading activities which has helped to elevate the country to its present commanding position in international commerce. The Navigation Acts of 1651 and of 1661, by prohibiting the import of goods from Asia, Africa, or America into England, Ireland, or other colonies, except in ships owned by English subjects and navigated largely by English sailors, were among the early measures designed to encourage ship-building and operation. Whether they achieved this end or not no one can say with certainty, for other factors were involved. But this policy indicated the importance that was attached to shipping. Probably a greater influence in the commercial development of the country was the widening of trade areas as one of

⁸ Pounds converted to dollars on basis of \$4.86. Cf. *Trade Promotion Series, No. 94, op. cit.*, p. 729.

⁹ *Trade Promotion Series No. 94, op. cit.*, p. 589.

the results of the era of discovery. This caused an increase in industry and wealth, stimulated trading, and acted as a general enlivening influence of economic activity of every description.

Ship-building

Until about 1850, most of the growing commerce was carried in wooden sailing vessels. Improvements in modes of construction so as to adapt ships to the new demands were few. Occasionally, there were bright spots in this enterprise, as with the development of the Yankee clipper, which for a time outdistanced all its rivals, but these were the exception rather than the rule. In fact, wooden ships had their limitations. Not all countries were adequately supplied with the proper kind of ship-building timber. England was one of these. In addition, growing commerce required larger and swifter vessels. But in this respect, absolute bounds were imposed on wooden sailing vessels. Builders were limited by the size of the timber. Moreover, an increase in size was at the expense of strength and safety. The use of iron, and later of steel, for construction purposes lifted all these restrictions. Notably, the vessels could be built to larger size, with much greater carrying capacity. Moreover, steel ships opened great opportunities for the development of power transportation, which incidentally, could never have taken place had the vessels remained of wood.

The shift from wood to iron and steel, and from wind to steam, as a means of propulsion, was a gradual process. But, at least by 1850, iron ships driven by steam-power had begun to demonstrate their superiority over other types of vessels. Although steam had been used as auxiliary power as early as 1819 by the "Savannah," it was not until 1838, when the "Great Western" crossed the Atlantic without recoaling, that transport under steam-power was a demonstrated success. With this change in construction the advantages passed to the United Kingdom, which possessed a highly developed metal industry, including foundries and machine shops capable of administering to the needs of ship-builders. This advantage remains in the hands of the British to-day. In the five years ending with 1929, the annual average construction of merchant vessels throughout the world was 2,672,400 tons. Upwards of 50 per cent of this work was done in the United Kingdom.

Foreign Investments

The founding of the Bank of England in 1694 was the herald of a new era in commerce and finance. In that year the government raised a loan

of £1,200,000 without giving security for the return of the principal. The lenders were allowed to enroll themselves as the Bank of England and were given the right to receive deposits of money and to issue bank notes. The "Facilities thus provided for borrowing and lending made people more willing to save money, since they could be sure of interest upon it by handing it to the bank to use, when they could not have put it to direct use themselves."¹⁰ This was not the first bank in the world, nor even the first great bank; but the founding of this institution gave a new turn to financial and industrial affairs in England.

Capital comes into existence as a result of production and saving. But many years of effort are required to build up considerable sums for use in business. In the case of Britain, these savings came about as a result of many years of successful manufacturing and trading. The net income from foreign commerce has added materially to these sums. This was obtained as profits on trade, income from freight and insurance services, commissions, and in recent years, largely from interest on foreign investments.

In many instances, British foreign investments, like those of other countries, are made for the purpose of developing industry and commerce. In fact, under modern arrangements, the prospect of an income anywhere is the signal for the flow of surplus capital in that direction.

The investor has followed closely on the heels of the explorer in practically every part of the world. This was the case with the trading companies several centuries ago. The history of the fur traders as exemplified by the Hudson Bay Company is another example. The discovery of resources of any description gives an impetus to the movement of capital. The great gold rushes of modern times are other obvious illustrations of this fact. At present, the great rivalry among American, British, and Dutch companies for the control of petroleum is hardly less spectacular. But, in a much quieter way, business enterprise of the great nations is in quest of baser metals, of opportunities for exploiting products of forests, soil, and waters. For years British and German capitalists have engaged in the production of natural nitrates in Chile. British capital has built many miles of railroads in Argentina. It is also engaged in the mining of copper, and other metals, in Chile and Peru, and in South Africa. Some \$300,000,000 of British funds have been invested in the production of rubber in British Malaya. Huge sums have been ventured in plantations, in urban real estate, in agricultural lands, and in foreign factories. The improvement of ports and harbors, the construc-

¹⁰ F. W. Tickner, *op. cit.*, p. 368.

tion of warehouses, and the financing of mercantile ventures have provided other opportunity for investment. Other large sums have been loaned to various grades of governments, usually for some economic purpose. The outcome of all this is to increase throughout the world the facilities for manufacturing and trading, to increase wealth and purchasing power, and to enlarge the opportunities for commerce.¹¹

The extent to which the United Kingdom has profited by such activities is indicated by the following: "The probable net income of the United Kingdom derived from overseas investments of a joint-stock character is in the neighborhood of £285,000,000. There should be added the income derived from investments of a private character, short loans, etc., which is probably in excess of the similar income paid to overseas residents."¹² This figure applies to the years from 1926 to 1928. This is the largest item in the British international credit balance. It represents a large credit which may be used for the purchase of foodstuffs and raw materials, or for further financial operations outside the country. In 1907 the income "available for investment overseas" was estimated at \$670,000,000. Since that date it has been sometimes more, sometimes less, depending on the times. A summary of the leading items in the international balance sheet is shown in the following table.

BALANCE OF INTERNATIONAL PAYMENTS (OTHER THAN THE LENDING AND
REPAYMENT OF CAPITAL) OF THE UNITED KINGDOM, 1924-1928
(IN MILLIONS OF POUNDS STERLING)

ITEM	1924	1925	1926	1927	1928
Estimated excess of Government receipts from overseas	...	...	4	1	15
Estimated net national shipping income	140	124	120	140	130
Estimated net income from overseas invest- ments	220	250	285	285	285
Estimated net receipts from short interest and commissions	60	60	60	63	65
Estimated net receipts from other sources	15	15	15	15	15
Total	435	449	484	504	510

Domestic Production

As indicated on a former page, the output of all the leading resources, except coal, is far short of national requirements. It follows from this

¹¹ Lippincott, *Economic Resources and Industries of the World*, p. 67.

¹² *Trade Promotion Series No. 94*, p. 730.

condition that the national economic organization must be managed so as to maintain a steady flow of foodstuffs and raw materials into the islands, to provide external markets for surplus manufactures, and to encourage the expansion of overseas credits with which payments may be made, if necessary.

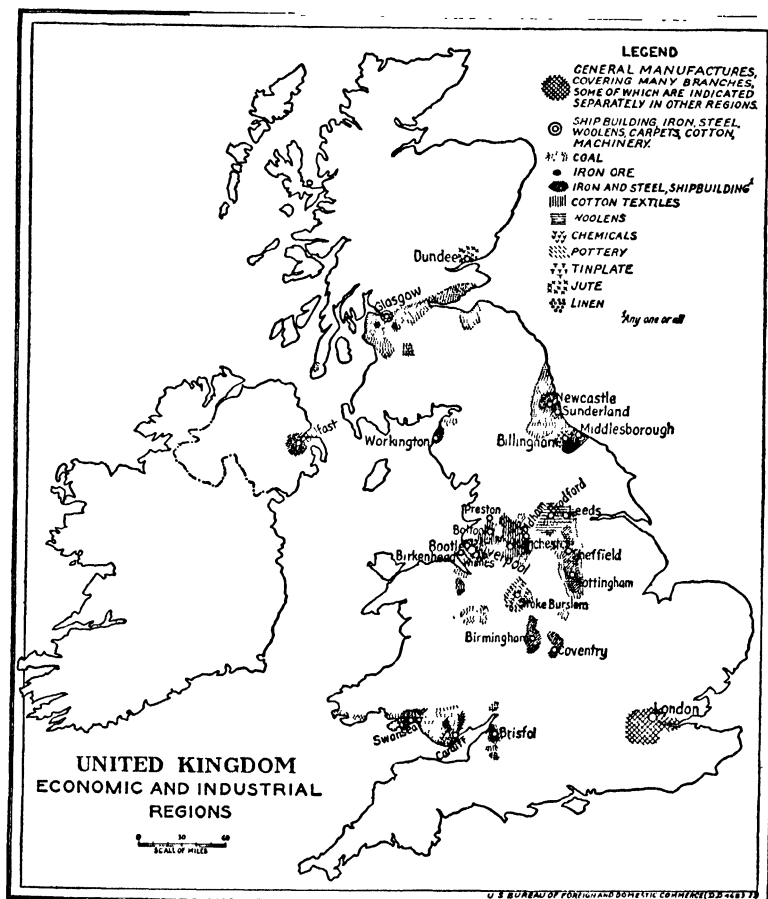


FIG. 10. INDUSTRIAL AREAS OF THE UNITED KINGDOM

With the abolition of the corn laws, about 1850, Britain chose deliberately to subject the farming classes to competition with the outside world. This came at a time when the greater grain area in the United States was in the process of development; in more recent years, other

grain regions, such as Canada, Argentina, Australia, to say nothing of the large producing countries of Europe, have poured their surpluses into the international markets, sometimes to their own detriment but always to the disadvantage of the British farmer.

But, on the other hand, from its limited area, Britain could not support its large population even if heavy restrictions were placed upon imports from the outside world. If the farming classes have been placed under handicaps, at least the population of the islands has been given the advantage of foodstuffs at international competitive prices.

In recent years the total acreage devoted to the leading cereals, wheat, barley, and oats, has never been in excess of 7,000,000; in 1932 it was 5,100,000. Usually, more than half of this is devoted to oats. The wheat acreage in 1932 was 1,300,000. In the same year Canada planted 27,100,000 acres to wheat, the United States 54,000,000 acres,¹⁸ France 13,200,000 acres, and Germany, 5,600,000 acres. If the area planted to this crop in England has been small, at least the yield has been high, usually greater than thirty bushels per acre, which is more than double the average for the United States. But at that, the wheat crop of the United Kingdom is usually less than 60,000,000 bushels.

The same general conditions, with respect to limited production, applies to livestock. Sheep are the most numerous of the farm animals. The number in 1932 was about 27,000,000; but there were only 8,200,000 cattle and 3,500,000 swine. The outcome of this situation is that foreign trading must supply not only large quantities of wheat and flour, but also of meat products, butter and cheese. Canada, the United States, Australia and Argentina are the chief sources of wheat, although varying quantities are obtained from other regions. Beef is shipped mainly from Argentina, Australia, Uruguay and New Zealand, and mutton chiefly from New Zealand, Argentina and Australia. Bacon is imported from Denmark, Netherlands, the United States, and the Irish Free State, and hams and lard mainly from the United States. This presents a considerable array of sources from which the British people are fed; but this is not all, because there are large imports of milk, butter, cheese, and fresh fruits. Considerable quantities of fresh milk and cream are brought from the Irish Free States, and this says nothing of condensed and other forms of canned milk obtained from various sources. Denmark is one of the largest sources of butter. In recent years, New Zealand has come forward as a large exporter of this product to British markets. Smaller quantities are obtained from Argentina, Australia,

¹⁸ In 1931.

Russia, Finland, and Netherlands. The development of processes of refrigeration has made possible long distance transportation of such perishables. This change, also, accounts for the shipments of chilled and frozen meats. The exports from Australia and New Zealand are impressive illustrations of this achievement.

The United Kingdom is also one of the best of the world markets for fresh fruits. The United States is one of the main sources of supply for such commodities as apples, pears, oranges, and grapefruit. Other countries have a share in the traffic. Oranges and lemons are imported from certain Mediterranean regions; apples, pears, and grapes, from Australia and New Zealand; and bananas, pineapples, and other tropical fruits from Central America and the West Indies. It thus appears that a considerable part of the world serves as a garden for the supply of British markets.

Mineral Products

A statement of the mineral products obtained from the resources of the United Kingdom makes a rather impressive showing. The list includes coal, iron ore, tin, copper, lead, zinc, to say nothing of a considerable number of non-metals. But only coal and iron are important, and even with the latter it has been necessary in recent years to rely on imports.

The production of tin is probably the most ancient of all British industries. The Cornish mines flourished for many centuries; but at present the output rarely exceeds 2,000 or 3,000 tons a year, as compared with some 110,000 tons for the Empire¹⁴ (The Straits, Australia, and Nigeria), and with 171,000 tons for the world. Britain now imports large quantities of tin either for local consumption, or for reexport.

For many years the London Metal Exchange was practically closed to the marketing of tin from other than Empire sources, but these conditions have changed. The control "of the world tin market exercised by London, has been largely due to the high degree of organization of the sales agencies and the lack of similar organization among purchasers."

From the standpoint of quantity, lead is the most important non-ferrous metal mined in Great Britain. But the local output is far below domestic needs. This is also the case with copper and zinc, the former now being the second most important industrial metal. This signifies that Britain relies on sources outside the Islands for necessary supplies.

¹⁴ In 1928.

It ought to be added that, notwithstanding this shortage of non-ferrous metals, the country contains a large smelting and refining industry based upon imported materials. In addition the metal working industries of various descriptions constitute important enterprises. The imports of various mineral products are shown in the table below.

IMPORTS OF CERTAIN MINERAL PRODUCTS INTO THE UNITED KINGDOM¹⁵
1929-1932

	1929	1930	1931	1932
Copper (ingots, etc.) (1,000 pounds)	344,315	324,908	292,535	328,922
Lead (pig and sheet) (1,000 pounds)	665,912	751,070	693,699	595,665
Zinc (crude) (tons)	142,430	135,384	145,357	87,696
Tin (ore and concentrates) (tons) . . .	92,776	76,454	60,525	47,279
Iron ore (1,000 tons)	5,689	4,138	2,119	1,795
Crude petroleum (1,000 barrels)	13,928	13,174	9,842	10,528
Mineral oils (Ref'd, 1,000 barrels) . . .	48,813	55,523	53,239	54,041

Iron Ore

The production of iron is one of the oldest industries of Britain. It has experienced various fortunes. At one period, beginning about 1558, it was seriously handicapped because of an act forbidding the felling of timber in certain counties. At that time the need of lumber for ship-building was deemed to be more important than that of charcoal for the production of iron. With the discovery of methods of smelting of ore by means of coke in the latter part of the eighteenth century the old difficulties were removed.

Although Britain contains considerable supplies of iron ore, much of this material is of low grade. This is one reason why it is necessary to rely partly on outside resources. Upwards of 80 per cent of the ores now under development lie principally in the Cleveland district of Yorkshire, in the Frodingham district of North Lincolnshire, in Northamptonshire, and in Rutlandshire. Hematites are found principally in Cumberland and Lancashire. The iron ore raised in the United Kingdom sometimes amounts to a little more than 15,000,000 tons a year. This compares with from 50,000,000 to 60,000,000 tons in the United States in reasonably good years. The imports are given in the table above.

Coal

The United Kingdom is the second largest producer of coal, the

¹⁵ *Foreign Trade Yearbook* (U. S. Department of Commerce), 1933, p 143.

United States occupying the first place. In the opinion of the Royal Commission on the Coal Industry (1925) the known reserves are sufficient for four or five centuries. Other possible reserves may extend the limit several centuries more. This industry has several aspects which are unique for Britain. One is the importance of the product in the development of foreign commerce. Under normal conditions it "provides approximately one-tenth of the value and four-fifths of the volume of total British exports. . . . By furnishing outward cargo for British shipping, coal materially cheapens freights for essential imports of food and raw materials."¹⁶

The exported coal finds a market in practically every part of the world, although the most important consumers are on the continent. The product is shipped to France, the Scandinavian countries, Italy, Germany, South America. At one time Russia was an important consumer. As with other commodities, the conditions surrounding consumption are subject to change. The development of hydroelectric power in some regions, the use of petroleum oils as fuels, and in some cases encouragement to the development of local resources, are factors tending to diminish the demand.

Factory Industries

As a manufacturing nation, the United Kingdom has lost the first-place rank which it held from the beginning of the Industrial Revolution almost to the beginning of the present century. That place has been taken by the United States. In addition, several other nations, of which Germany and Japan are outstanding examples, have developed a great factory system. They are not only making a bid for foreign markets, but to an increasing extent are supplying their own domestic needs. They protect home markets with some form of tariff and not infrequently employ subsidies in one form or another to assist manufacturers in the promotion of foreign sales. The international situation is complicated further by the fact that many of the smaller nations have been inspired to become manufacturers of commodities in which they think they have an advantage, and these, also, protect their home markets.

Apparently the day has passed, at least for a period, when a nation which has become preëminent in given fields of production can claim world markets for its goods and hold these in the face of international or domestic competition.

¹⁶ *Trade Promotion Series*, No. 94, *op. cit.*, p. 91.

Britain suffers most from this change of conditions. Textiles have long been the leading manufacture, with foodstuffs and iron and steel ranking high in the list. Ship-building has been for long an important enterprise; and more recently the production of chemicals and of the various products of the non-ferrous metals, have risen in the scale. For years Britain's preëminent position in the sale of textiles was unchallenged. In 1913 the total exports of cotton cloth were estimated at 6,580,000,000 square yards. In 1928, when world markets were still reasonably normal, the shipments were only 3,866,500,000 square yards. Exports of 1932 showed a further loss of about a billion yards.

Although British cottons were sold in all the world markets, those of Asia were by far the most important, with India, China, Netherland East Indies, and British Malaya being the largest consumers. These markets have turned out to be the most vulnerable. The growth of a cotton manufacturing industry in India and China has contributed something towards a curtailed demand, but a more important factor is the recent competition from Japanese manufacturers.

The markets for woolens have suffered far less from foreign competition than cottons; but, then again, this branch of the textiles is of little significance compared with the cottons. In addition to textiles and coal, other important exports are the manufactures of iron and steel, machinery, and chemicals.

Balance of Trade

On a former page we referred to the favorable credit balance of the United Kingdom. These figures should be studied in connection with the physical balance of trade. For many years the imports have exceeded the exports. In the five year period ending with 1905, the average annual value of goods imported exceeded those exported (including the reëxports) by \$850,000,000; the average for the five years ending 1930 was \$1,917,000,000; and for 1932, \$906,000,000. But from the point of view of the total foreign economic relations, year in and year out, the credits exceed the debits.

A significant factor which has entered the relations of a few of the great industrialized countries is the growing importance of the invisible items of trade. The data cited earlier in this chapter is an illustration of this development. If Britain finds foreign markets more difficult to maintain, there is some compensation in the fact that her invisible credits have not been impaired. It would not be true to say that the country is less of a marketer of foreign products than she was in former

years for, except for the recent abnormal times, the reëxport business has continued in large amounts.

But this is not all. The huge investments abroad, variously estimated at from \$15,000,000,000 to \$20,000,000,000, do not represent this much money loaned to competitors. A large percentage of this outlay is in British-owned enterprises. In some cases these do compete with home industries; but in others they supplement home production by providing necessary raw materials, by supplying essential foodstuffs, by providing in other sections of the world needed facilities for carrying on trade, and by producing great quantities of goods not required in British consumption but which afford an opportunity for further trading, and hence a means of added profit. In these respects, among the nations of the world, Britain has become relatively less of a manufacturer and trader and much more of a promoter and investor.

Commercial Policy

No one can say with certainty how much weight can be assigned to national commercial policy as a means of promoting national economic development. Britain has prospered under systems of rigid restrictions and also under a policy of relative freedom of trade. In many cases she seems to have bungled through, but the outcome has been favorable.

Until the coming of the modern era, every nation cast its lot with some form of trade restriction, and in some instances this was extended to internal relations. Britain followed a similar policy. Tariffs were laid not so much as a source of revenue but as a means of building up national power. The later mercantilists, at least, advocated the regulation of exports and imports to the end that the balance of trade should be favorable. An unfavorable balance was looked upon with apprehension, since it was believed that under such a condition, wealth was extracted from a country, and if the condition continued, the march downward had begun. Prohibitive export duties were sometimes laid on desirable raw materials in order that they might be conserved for necessary home industries. On the other hand, heavy imposts were laid on imported commodities which threatened the success of domestic industries. The choice of such measures often required fine distinctions and round-about methods of reasoning. But, in any event, the goal was clear, namely, national power through prosperous economic activities.

Vigorous colonial development was a branch of this policy. For one thing, colonies were to provide a market for the surpluses which could not be consumed at home. When all nations were practicing restrictions,

the surest route to a foreign market was through controlled possessions. In addition, it was hoped that the colonies might supply, to the limit of their ability, certain raw materials which were needed in the home country.

A well-rounded mercantile system included, also, assistance to the agriculturalist, encouragements to immigration, and the building-up of an adequate merchant marine. Earlier in this chapter we have referred to the Navigation Acts. No doubt, the development of naval power was involved in this policy, along with the promotion of shipping. In any event, a controlled merchant marine was deemed necessary for commercial expansion. Once introduced, these measures were amended and enlarged through the succeeding century, and then the pendulum swung in the other direction. In England such laws were finally abolished in the years from 1849 to 1854.

A similar course described the tariff history. The theoretical groundwork for reform had been laid by certain French writers, and in England, by Adam Smith. Economic conditions were also playing into the hands of the reformers. Britain was developing her manufactures and saw an opportunity under freer trade of vastly increasing her markets. On the other hand, some foreign countries envisioned larger sales for their raw materials in the industrialized areas.

Some fifty years or more of agitation were required before the old restrictive system could be abolished; but along the route were such events as Huskisson's Reciprocity of Duties bill in 1823, making possible certain reciprocity treaties, the formation of the Anti-Corn-Law League in 1838, the speeches of Richard Cobden and John Bright, the gradual lowering of certain duties, and finally, in 1846, a bill which looked forward to the abolition of duties on wheat.

It ought to be said in passing that other nations were inspired by the spirit of freer trade, and that from 1860 to about 1880 much of the commercial world enjoyed relief from rigid restraints on commerce. Although Britain clung to the free trade idea until the recent war period, other countries, under one pretense or another, gave it up. As a rule, the deciding factor was the founding of manufacturing industries within various countries, and the desire to defend new industries against foreign competition.

A Change of Policy

Since the turn of the century, there has been a drift of opinion towards a protective system. This is due, in part at least, to a marked change in

industrial conditions throughout much of the world since Britain adopted the free trade system. In place of one great nation marketing its ware in every corner of the earth, a number of industrialized countries have become competitors in international markets. In all of these some form of protectionism prevails. They dump their surplus products in foreign markets, often to the detriment of competing manufacturers. Under these conditions, a free market labors under handicaps.

As early as 1903 advocates of a protective system introduced a program which provided for a 10 per cent general tariff on imported manufactures, a small tax on other than colonial foodstuffs, and free admission of raw materials. In 1915, as a war measure, duties as high as $33\frac{1}{3}$ per cent were levied on a selected list of goods; but the purpose seems to have been to reduce the consumption of such articles, to produce revenue, and to save shipping space. The popular attitude changed to a marked degree during the war period when a great many persons advocated protection against dumping of foreign products, maintenance of British key industries, protection against foreign competition, and the inauguration of a system of imperial preferences. The road of the protectionists was by no means easy, because there was still a considerable body of opinion which held to the old policy. But changing conditions are forcing the country away from established methods, and such measures as the Abnormal Importations Act of 1931 indicate in which direction the wind is blowing.

Imperial Conferences

The old order has changed in another respect. For a number of years the self-governing dominions have been claiming a voice in the administration of certain Empire matters, particularly those which relate to trade relations. But, in addition, Imperial Conferences have sometimes discussed the question of Imperial federation and Imperial defense. The first conference dates back to 1887, the jubilee year of Queen Victoria's accession. Others have been held since that time. No one can foretell the final outcome of these meetings. With many diverse interests represented, clashes of opinion are inevitable. But, at least, it is certain that the Empire is not falling apart. On the other hand, the conference method presents an opportunity for the better understanding of general problems. The chances are for a closer union of some description as the probable result.

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CHAPTER IX

COMMERCE OF MODERN GERMANY

The supremacy of the United Kingdom as a producer and trader has been challenged in recent years by several nations. That the old order would change was inevitable. Britain's rise as a commercial and industrial nation came at a time when other countries were not in a position to develop an industrial system. It is true that because of the possession of new inventions and of a more thoroughly integrated economic system, Britain enjoyed all the advantages that come from the momentum of an early start; but other factors were involved.

Disadvantages of the Continental Countries

As yet Germany and Italy were not united. This did not occur until about 1870. Periodically, France was in the throes of political troubles. Wars, and threats of wars, directed the attention of leaders on the continent more to military than to economic matters. Men and funds which might have been employed in industry were used in military service. Until after 1860 Japan was practically closed to the world. The people of the United States were more concerned with the development of their vast domain and in the expansion of domestic markets than in quest of trade outside their borders. Smaller nations were producers chiefly of raw materials, and even where local industries existed, the output could not satisfy local demands. But these conditions could not last forever.

It must be said in passing that the economic instincts of the British people led them to make the most of their opportunities. But the people of other nations were similarly endowed, and it was inevitable that the time would come when they would engage in some form of machine industry as a means of improving living conditions. In some instances, other nations were unusually equipped with physical resources. Eventually, they were inspired by the prospective benefits of economic development.

Political Conditions

In Germany, an important condition of economic advance was political order and stability. This is not the place to study in detail the various steps by which unification was brought about. A description of conditions as they existed early in the nineteenth century will be sufficient to indicate the difficulties under which the lands which became the German Empire labored. Germany was then divided into numerous independent countries. "Each of the thirty-eight states had its own customs line, which cut it off from its German neighbors as well as from foreigners. How this hampered trade can readily be seen by examining the map of Germany at that time. The Duchy of Anhalt was almost completely surrounded by the territory of Prussia; the Grand Duchy of Oldenburg lay like a great wedge driven into the kingdom of Hanover, having its only outlet on the North Sea; the Grand Duchy of Hesse was broken in twain by a narrow strip of the electorate of Hesse; and the important kingdom of Wurtemberg was surrounded by Baden and Bavaria. Had one traveled in a straight line from Fulda to Altenburg, a distance of some 125 English miles, he would, on the way, have crossed thirty-four boundary lines and have been in the dominions of nine sovereign and independent monarchs. A merchants' association complained to the diet of the Confederation in 1819 that in order to trade from Hamburg to Austria, or from Berlin to Switzerland, one had to cross ten states, study ten different customs systems, and pay ten tariff charges."¹

The German people themselves realized these difficulties, but failure to bring about unity was due largely to the "tenacity with which the numerous German rulers clung to their sovereignty and independence."

As an early step in the removal of these conditions, Prussian ministers adopted reforms which cleared away customs lines within the kingdom. The Zollverein, or customs union, of 1834 extended freedom of trade over a much larger area; and in the end, the formation of the German Empire in 1871 made possible united action not only on matters of trade, but of industry as well. A national policy was in the making.

Resources

Even before the founding of the Empire, much of the groundwork had been laid for the development of a national industrial system. The first railway had been built in 1835; a network of telegraph lines brought

¹ Robinson and Beard, *The Development of Modern Europe* (Ginn and Company, Boston, 1908), Vol. II, p. 109.

many sections into close contact; and a number of industries were already producing wares both for local and foreign consumption. The leaders of state and industry lost no time in consolidating the system to make it operate as a national industrial organization. After the war with France, the empire covered some 208,000 square miles, a territory more than 70 per cent larger than that of the United Kingdom. This area contained some of the richest physical resources of any country in Europe. There was ample space for the development of agriculture, and the application of scientific methods subsequently enhanced the productivity of the soil.

Meanwhile, railway transportation was supplemented by an extensive system of water carriage. The existence of such rivers as the Rhine, Elbe, Oder, Weser, Vistula, and the Danube gave the country a good means of natural communication; but eventually these streams were improved by deepening and by canalization.

Mineral resources were abundant. Iron ore, lead, and copper, existed in sufficient quantities for the early stages of growth. Subsequently, potash became an important material. Coal was the most abundant resource. Before the cession of certain of its territories, as a result of the late war, Germany was one of the best endowed in this respect of any country in Europe. These resources included great deposits in the basin of the Ruhr, the Saar valley, and extensive reserves in Upper Silesia.

Mining was carried on to a limited extent before the end of the eighteenth century. But German miners labored under the same difficulties as those in England, namely, trouble with water in mines, and lack of adequate hoisting devices. Steam-power was needed here, as in England, to make extensive exploitation possible; and of course, miners needed markets for their product. Rising domestic industries soon satisfied this need.

In 1848 the production of coal amounted to only 4,300,000 metric tons. The draft upon these resources was greatly augmented after 1870 with the development of the new industries. Production in 1875 was about 37,400,000 tons, and in 1913, the year before the war, it was 190,000,000 tons, to which should be added 87,000,000 tons of lignite. Thus Germany became the third most important producer of coal.

In the case of iron ore, the potential reserves of Germany are considerably less than those of some other European countries. Some deposits are at a considerable distance from coal, and much of the ore contains phosphorus. It is of greater advantage to certain manufacturing centers to import ores than to depend upon local supplies; and, upon

occasions, import is necessary, also, for the purpose of mixing with local ores. In fact, with the growth of industries, in recent years, domestic production has not supplied home consumption. This is much more the case at present because of the loss of the Lorraine and a portion of the Silesian deposits as a result of the post-war readjustments of territory. For some years, iron ore has been one of the most important imports, supplies coming from Spain, Sweden, and from other sources. In 1913, Germany produced over 28,000,000 tons of ore, but the annual average from 1926 to 1930 was only 5,800,000 tons. The imports in 1929 were 16,600,000 tons, and in 1932 3,300,000—the latter figure being abnormally low, due to depression conditions.

Although Germany now has a highly developed industry based on the uses of copper, the country is less amply supplied with local resources than with iron ore. Consequently, large imports are necessary. Mine production since 1920 has ranged between 20,000 and 30,000 tons. On the other hand, the imports of crude and fabricated copper, including brass and bronze, exceeded a billion pounds in 1929, and were nearly 700,000,000 pounds in 1932. As with iron ore, copper, in crude or semi-manufactured form, is one of the largest imports.

Germany is also a producer of lead and zinc; but under modern conditions, she must import considerable quantities to satisfy her varied requirements. In 1929, in terms of value, the import of these essential metals amounted to more than 9 per cent of the incoming commerce, and in 1932 to about 6 per cent. This data is given in more concrete form in the table below.

IMPORTS OF CERTAIN METALS; 1929 AND 1932

ITEM	1929		1932	
	QUANTITY	VALUE	QUANTITY	VALUE
Iron ore, (tons)	16,685,000	\$ 75,170,000	3,397,000	\$12,922,000
Copper, crude, brass and bronze, (pounds)	1,045,000,000	182,611,000	692,494,000	44,628,000
Lead and alloys (pounds)	303,432,000	15,918,000	112,151,000	2,302,000
Zinc and alloys (pounds)	319,474,000	18,257,000	237,756,000	5,441,000

The dependence of this country on the outside world for metallic substances is not told completely by this table. The shipments include large quantities of iron and steel, mineral oils, tin, and some of the rarer elements. The products last named, which include tungsten, nickel,

vanadium not to mention them all, are essential for the successful pursuit of the metal industries.

Industrialization in Germany has produced similar results to those in Britain, namely, the dependence upon foreign countries for vast quantities of raw stuffs, which are fabricated in domestic industries either for home consumption, or for export. This dependence is even more impressive with respect to textile fibers than to metals.

Textile Fibers

The textiles constitute one of the most important branches of German industrial activity. In 1925 more than 10 per cent of the workers were employed in these industries.² In 1932 the country had a capacity of over 10,000,000 cotton spindles, about one-fifth the number in the United Kingdom, and one-third those of the United States. At this time, among the nations, Germany ranks third in spindle capacity. But the industry depends entirely upon imports for raw materials. The fiber is obtained largely from the United States, with smaller quantities from Egypt and India, and sometimes through British markets as a reexport. The imports include not only raw cotton and linters, one of the largest items in her foreign trade, but also cotton yarns, and Germany imports certain quantities of cotton fabrics. Raw jute, silk, and wool, and yarns of wool and rayon add greatly to the foreign bill for textile materials. In 1932 the sheep on the farms was only one-eighth the number in the United Kingdom, namely, 3,400,000. In 1929 upwards of 15 per cent of the value

IMPORTS OF CERTAIN TEXTILE MATERIALS; 1929 AND 1932³

ITEM	1929		1932	
	QUANTITY	VALUE	QUANTITY	VALUE
Cotton and linters,				
(pounds)	939,685,000	\$185,169,000	875,350,000	\$ 67,278,000
Wool (pounds) . . .	372,645,000	143,741,000	316,085,000	39,777,000
Silk (raw) (pounds)	5,297,000	28,823,000	1,544,000	3,313,000
Jute (tons)	139,000	20,292,000	74,700	4,654,000
Yarns and thread				
Cotton (pounds)	73,130,000	44,058,000	34,107,000	11,468,000
Wool (pounds)	50,987,000	44,743,000	23,801,000	9,531,000
Rayon (pounds) . .	25,255,000	23,523,000	25,501,000	12,348,000
Total		\$490,349,000		\$148,369,000

² Including mining and manufacturing.

³ *Foreign Commerce Yearbook* (U. S. Department of Commerce), 1933, p. 59.

of the total imports was for raw and partly finished textile fibers, and in 1932 about 12 per cent. This data is summarized in the table on page 143.

Farm Products

In the case of food products, Germany is far less dependent on the import trade than with textile fibers and most of the minerals. This country is the largest producer of potatoes in Europe, with an output three times as great as that of France, and about seven times that of the United Kingdom. Several European countries are large producers of sugar beets, including Russia, France, and Czechoslovakia, but in this output, also, Germany usually ranks first. In the production of oats, Russia alone, among the nations of Europe produces larger quantities. Germany is also the most important producer of rye, Poland being her closest competitor. In the case of barley her output is exceeded only by that of Russia. But the showing is not as impressive with respect to wheat. The great output of Russia overshadows that of all others, and the rank of Germany is usually fourth or fifth. Production in 1932 was 183,800,000 bushels. In addition to the commodities already named, the fields produce considerable quantities of fodder beets, hay, alfalfa, hops, tobacco, and grapes.

In making comparisons with other countries one must take into account the fact that Germany has a large population to feed and many farm animals to sustain.

The population has increased remarkably since 1871, despite the fact that Germany is not assisted by a large annual immigration, as is the United States. In the years from 1871 to 1910 this country added nearly 24,000,000 to her numbers, the population at the latter date being 64,900,000 (former boundaries). Throughout this period the population of France has been practically stationary; the addition from 1872 to 1911 was only 3,500,000.

This growth has imposed a great burden upon the field resources which has apparently been met in a fairly satisfactory manner. In addition to the large production of cereals, Germany in 1932 had more hogs than any country in Europe, and more cattle than any nation except Russia, the numbers being 22,800,000 and 19,100,000 respectively. In some cases, the field products are made to do double duty, as with sugar beets and potatoes, where the waste of certain industries which use these commodities as raw materials is employed as feed, a kind of economy which is necessary where every pound of food, or foodstuffs, must be made to serve some useful purpose.

In spite of this favorable showing, the country is forced to rely upon imports either to augment the domestic supply, or to obtain goods which her own fields do not produce. The imports of foodstuffs include meat, game, poultry, butter, eggs, fish, fresh vegetables, fruits and nuts, coffee, cacao beans, and sometimes sizable quantities of the cereals. In 1929 Germany spent abroad for such commodities over \$754,600,000, which was about 24 per cent of her total imports; for 1932 the figure was \$290,300,000 or about 26 per cent.

Manufacturing Industries

One of the most significant features of German economic activities since the formation of the empire has been the development of manufacturing, an enterprise for which the genius of the people seems to be admirably fitted. They have readily submitted to the discipline which factory production requires and have been eager to acquire training in crafts and callings. Where it was necessary, they have been willing to obtain the type of education that fitted them for some specific industrial or commercial occupation. Energy, thrift, patience, willingness to submit to the grind of hard labor, have been among their personal characteristics.

At the time of the formation of the empire the people still depended largely on agriculture as a means of livelihood. Although factory production was in existence, the enterprises were small, and the type of production which more nearly characterized the country was that of home industry, with simple machinery, and without the aid of power devices. Not that this condition has entirely disappeared from this country, or from others in Europe, but it is no longer a feature of manufacture. The growth of cities and concentration of a larger proportion of the population in them is an indication that an increasing number of persons are gaining a livelihood from commerce and industry. For 1871 it was estimated that only 32 per cent of the population was urban; in 1925, 64.4 per cent resided in places of over 2,000 residents. In Germany to-day there are more than ten cities with a population of over half a million, and one, Berlin, has a population in excess of 4,000,000.

Factory development bears many of the characteristics of industrial expansion in the United States, with a few others which are peculiar to the German situation. The growth in size of enterprises has been notable, and this involved here, as in the United States, the interlocking of interests, the "trustification" of some of the greater enterprises, and the intimate connection between banking and industry. The willingness of

the German industrialists to make prompt use of new inventions, to discard old methods when they become ineffective, to make extensive use of industrial research, and to study consumers' tastes and peculiarities, notably in export selling, have been important factors in the development of the business organization.

Rapid industrial upbuilding depends on the capacity of the heavy industries, particularly iron and steel, and machinery. These, of necessity, have become some of the greatest enterprises. The growth of such manufactures acted both as a cause and effect. The increasing need for their products was a great stimulus to expansion. On the other hand, a machine industry which is capable of administering promptly to advancing needs is one of the essential conditions of progress.

Not only iron and steel, and machinery, but other metal-working enterprises are among the important activities. The production of textiles, of electrical machinery and wares, of chemicals, of food products, and of clothing, are some of the leading manufactures.

Germany enjoys one of the largest domestic markets in the world. This alone provides great possibilities for industrial expansion. But, as we have already indicated, Germany is far from self-sustaining. Since she has not been able to build up considerable amounts of invisible credits, as have the United Kingdom and the United States, she must rely largely upon her exports to pay for imports, and hence foreign commerce becomes a matter of great importance.

On a former page we have given some idea of the imports of mineral products, textile fibers, and foodstuffs. This country is also a large importer of oil seeds (\$205,020,000 in 1929 and \$76,300,000 in 1932), of timber and lumber, crude rubber, pulp wood and paper pulp, and various other raw materials. The manufactures now constitute a relatively small part of the import trade.

Colonies

The late war interrupted the normal course of expansion, but until that event, German foreign trade continued the growth which was begun shortly after the founding of the empire. The merchant marine was developed, banking institutions were extended into foreign fields and facilities for foreign trade were enlarged.

In one important respect, however, this growth differed from that of England and France. Until the creation of the empire, Germany had had no colonies, and when her leaders became interested in this type of

expansion, the better lands of the globe were already claimed by other powers.

As a forerunner of interest in this wider field, there had been established, even before the formation of the empire, a Central Union for Commercial Geography and the Advancement of German Foreign Interests. An African Society was established in 1878 designed to carry on exploration and to educate public opinion in favor of colonial expansion. As an outcome of subsequent activities, Germany acquired a large area, formerly known as German Southwest Africa, and still larger territories in east Africa. Colonizing ambitions extended into other fields, but with less success. German merchants and investors developed railways in Asia Minor, Syria, and Mesopotamia, and in 1906, they sought acquisitions in Morocco. Meanwhile, the country acquired small holdings in the Pacific and obtained a foothold in China in 1897 when she acquired the bay of Kiau-Chau and some 2,000 square miles of coast. All in all, her possessions at the outbreak of the war covered some 930,000 square miles, with a population estimated at about 15,000,000.

The purpose of this activity was to acquire new markets for German products, to obtain controlled sources of raw materials, and to prepare new homes for prospective German emigrants. The late war brought these colonizing ventures to an end. Under one form of administration or another, these territories were transferred to other powers as a part of the peace settlement.

Merchant Marine

A more feasible way of expanding commerce was in the development of a merchant marine. This not only promised effective carriage of German goods, but of equal importance, it afforded an income from the rendering of a valuable service. It provided an invisible credit which could be used in purchase of much needed materials. Moreover, ship-building provided a great industry, which, because of its relations with other manufactures, enlarged the scope of home economic enterprise. Eventually, great shipyards were established at Stettin, Hamburg, Bremen, Danzig, and Kiel, in which vessels were built not only for home capitalists, but also for foreign account. These included both merchant vessels and war crafts.

In 1895 the German merchant marine included some 1,700 vessels, and in 1932, 2,150. The gross tonnage of her merchant shipping in 1914 was 5,135,000. As one outcome of the Great War, Germany was com-

pelled to transfer many of her ships to other powers to make restitution for ships sunk by German submarines. Although this largely depleted her merchant shipping, the loss has been partially restored, and in 1932, the gross tonnage of German vessels amounted to upwards of 3,888,000 tons.

Foreign Commerce

By the outbreak of the war the total foreign commerce of Germany, exports and imports, had expanded to \$4,970,000,000, a sum which was in excess of the foreign trade of the United States in that year, but less than that of the United Kingdom.

Both German commerce and industry have suffered various fates since the war. Payments on the reparations account, discharge of a part of the reparations in kind, monetary disturbances, and severe competition in international markets, have been disturbing factors. At no time since the end of the conflict could conditions be considered normal. For a brief period from about 1924 to 1929 the country enjoyed a flush of prosperity, financed to a considerable extent on funds borrowed largely from the United States and the United Kingdom. In money values, at least, foreign trade reflected the effects of these times. The total foreign commerce of the country in 1929 rose to \$6,414,000,000. Since that year, Germany, along with all other countries, suffered severely from the industrial collapse, and internal political troubles added to the weight of the depression. The foreign commerce in 1932 amounted to only \$2,487,000,000.

German commerce is spread over practically every region of the earth; but, as a rule, the United States has been the largest source of imports. This is because we are large exporters of certain raw materials. Raw cotton is always the most important item, sometimes amounting to about 30 per cent of the shipments from the United States; but this trade includes also copper, lead, zinc, mineral oils, lard, and smaller quantities of wheat, flour, rye, barley, fruits and nuts and tobacco. Germany imports, also, certain types of manufactured products, such as chemicals, automobiles, machinery, and the current list of specialty manufactures which are characteristic of our industrial enterprise. In 1929, 13.3 per cent of her imports were obtained from this country, and in 1932, 12.7 per cent. Exports from the United Kingdom rarely exceed 6 per cent of the total, and from France scarcely more than 5 per cent.

On the other hand, Germany is much less of a seller than of a buyer in American markets. In 1929, our imports from this country were

only 7.4 per cent of her total, and in 1932 only 4.9 per cent. The United Kingdom and Netherlands are the most important customers; each, in the years from 1929 to 1932, took about 10 per cent of what Germany had to export. Due to liberal credits, sponsored partly by the German government, the export trade to Russia assumed important proportions, nearly 11 per cent of the total in 1932. The chief exports of Germany are various products of iron, steel and copper, including machinery, coal, textiles of cotton, wool, and rayon, chemicals, furs, leather, and a varied assortment of goods of other descriptions.

Balance of Trade

With the rise of the industrial system, Germany became more and more dependent on external sources for materials which she did not possess in sufficient quantities within her own borders. One result of this condition has been that for many years the physical imports have tended to exceed the physical exports. This was notably the case even in the earlier years of the present century. As an annual average, from 1901 to 1905 the unfavorable balance amounted to \$260,000,000.⁴ Apparently, until the war period, this situation did not get out-of-hand. In fact, for a number of years, Germany had been gradually building up invisible credits, chiefly from shipping service, and from investment overseas, and these, in a large measure, offset the unfavorable trade balances. They seemed to have more than achieved this purpose since during the early part of the century, Germany was a rather consistent importer of gold.

The income from shipping alone, in 1913, was estimated at 540,000,000 marks a year. But there were other sources of external payments. German investments comprehended a wide range of objectives; they included not only shipping, but plantations, mining enterprises of various descriptions, power sites, and industrial plants. Large sums were placed directly in branch banks, or agencies, and more or less indirectly, through stock ownership, in foreign banking enterprises. During the war, when many of Germany's former trade activities were condemned by her enemies, such investments were looked upon as a thrust at the independence of business enterprises beyond her borders.⁵ It was said, in particular, that German capitalists singled out key industries, for the reason that such control dominated not only the particular industry,

⁴ General imports minus general exports.

⁵ Cf. Henri Hauser, *Les Méthodes Allemandes d'Expansion Économique* (Armand Colin, Paris, 1916), pp. 127 ff.

but all those which were related to it. In this connection it might be said that funds from practically all the industrial nations are sent abroad to develop resources, to establish factories, to control mining rights, and in other ways, not only to gain an income for their owners, but to secure a hold on such activities. Economic penetration is a common phenomenon among the industrial nations.

Estimates of German foreign investments in 1914 ranged from 20,000,000,000 to 30,000,000,000 marks, which was an increase of approximately 200 per cent over the thirty years preceding. In 1913, the invisible credits arising from various enterprises, such as earnings of German shipping, income from foreign banking, insurance, and profit in mercantile enterprises, was estimated at from 1,200 to 1,600 marks annually. In that event, the invisible items more than offset the unfavorable physical balance. The confiscation of German property in enemy countries and the destruction, or surrender, of much of the merchant shipping, created a new situation which has been difficult to meet, partly because the country has been deprived of an important means of buying needed materials. This became a problem notably in the years after 1929 when foreign lending was shut off.

This is not the place to discuss the Dawes plan, and the later Young plan, in relation to their bearing on German foreign commerce. Those plans are no longer operative; but in one way or another they played their part in the post-war confusion. Suffice to say that in the light of the new conditions which post-war adjustments brought about, the weight of the contention as to Germany's capacity to pay rested with those who affirmed this capacity.

Commercial and Industrial Policy

Germany was noted for the care with which she studied foreign markets, for long commercial credits, and for the easy treatment of foreign customers. There is a suggestion in this policy that competition was severe, and that possibly some establishments were oversupplied with producing capacity. At any rate, combination, in one form or another, became a policy in a number of industries.

It is an error to assume that all combinations have for their purpose monopoly gain. In some cases they are organized for protection against destructive competition, either domestic or foreign. There is some reason for believing that in Germany the rise of combination organization, by whatever name, was in keeping with the spirit of industrial coöperation which has been a dominant characteristic of many gainful enter-

prises. The buying organization is a kind of coöperative affair, but it is monopolistic in a way since it brings buyers together for combined purchases, and leaves competition on the seller's side.

Germany took up readily with the combination idea after her industries were thoroughly under way. Among the international cartels "Irma," the International Rail Makers' Association, which appeared about 1883, is said to have been "the grandmother of them all." Some 114 recognized international cartels were said to have been in existence just before the outbreak of the late war; that is, "there were 114 known to have a habitation and a name, a headquarters, a written agreement, but nobody knows how many gentlemen's agreements to respect one another's domestic markets had been tacitly reached between competitors who faced each other across national borders."⁶ Coal, iron, and steel claimed the greater number; and the list included chemicals and allied industries, shipping, textiles, stoneware and porcelain, paper and pulp, and electrical manufacturers. In many of these Germany had a part.⁷

Provision for industrial credit was not overlooked in this era of combination. Financial assistance was ordered under the ægis of the great banks, which were much more than banks of discount and deposit, but enterprises which promoted and financed industry and trade, "cartels of banks which proceed to concentrate formidable capitals in the same activity, sometimes for the exploitation of an industry, sometimes for the creation and direction of a subsidiary bank."⁸

The advantages of such concentration which, to all intents and purposes, terminated in unity of direction has been described as follows: "The great banks may develop programs in which they have a common interest. . . . They can rise above the pure policy of dividends, take account of the general interest, adopt an industrial plan, direct the placement of capital, make provision for colonial affairs, exports, canals, navigation, and cables. They may exercise control over the press and public opinion, foresee industrial crises, diminish their effect, prevent panics. Thanks to an understanding between the state and a small number of banks which have their seat, or their center of gravity, at Berlin, an exchange of ideas may be rapid and effective."⁹

The post-war period was particularly trying to those nations which

⁶ R. Liefman, *International Cartels, Combines and Trusts* (Europa Publishing Company, London), p. 19.

⁷ I. Lippincott, *Economic Resources and Industries of the World*, p. 562.

⁸ Henri Hanser, *op. cit.*, p. 72.

⁹ *Ibid.*, p. 73.

had greatly expanded producing capacity. As a rule, such industries were faced with a market too small to consume the output. This was notably the case with iron and steel. As early as 1924, there was formed in Germany the *Rohstahlgemeinschaft* designed to regulate the production of such commodities in Germany. Each month the organization was to state the proportion of capacity for each member. Then, after various preliminaries, there came into existence in 1926 an international agreement in which Germany, France, Belgium, Luxemburg, and the Saar were participants. A managing committee, made up of representatives in the various countries, fixed the tonnage quarterly, basing judgment on the probable needs of the market. This is only an illustration of the workings of such international agreements, although they vary in scope and method.

During the period of expansion, the German government took an active part in promoting general economic development. The adoption of a protective tariff, subsidy in the development of shipping, favors to exporters in the form of rates on the German railways, the use of bargaining tariffs to gain a favorable position for German goods, and systems of social insurance which alleviated somewhat the condition of the workers, were some of the fields of government activity.

Passing mention should be made of agricultural coöperative societies which have found favor in Germany, as in some other countries of Europe. In 1926 about half such societies were coöperative credit organizations, or savings banks. Consumers' coöperative organizations have been built up in a number of rural communities. One of the characteristics of the system is the small credit institutions organized for service to the small borrower. Friedrich Raiffeisen organized the first village bank in 1862. He preached the gospel of thrift and mutual aid, and the founding of these banks was a part of his scheme. The basis of his organization "was unlimited liability of members. . . . His original idea was that the village bank should be the nucleus of a general-purpose society for buying and selling and other activities of the members." Subsequent development, however, carried these institutions away from some of the ideas of the founder. For one thing, the special coöperative society, organized for some special purpose, seems to be better adapted to modern needs, and development has taken this direction.

These are only examples of the coöperative spirit which prevailed among many classes of producers. They have provided a form of organization in which people have been trained to work together. In various ways such measures have promoted economic expansion, which

has been of benefit not only to the home people but indirectly to foreign trading. Many of these societies were hard pressed because of the troubles of the country during, and after, the war. But the pattern of such organizations seemed to be ingrained in industrial life.

With respect to tariff policy, the leaders of Germany seemed to have been impressed with the spirit of liberalism which prevailed shortly after 1860. Industrial development brought an inevitable clash of interest within the country. In the earlier part of the period, the agricultural interests, which at that time were the most powerful elements in the affairs of state, looked with favor on the liberal policy of the government, since it gave them an opportunity to exchange the surplus of their field products for manufactured goods, notably with Britain. Such duties as existed were low and the free trade ideas seemed to have gained the upper hand. In fact, about 1877, a large percentage of all imported products paid no duty. But times changed with a change of economic conditions within the empire.

With the coming of the empire there rose a strong spirit of nationalism, which led the people to desire the building up of their own industries which were forced to compete more and more with those in the outside world; shortly, there was added the idea of military protection and preparedness, with the deduction that this could be brought about most certainly by making the nation as self-sustaining as possible.

The products of new industries encountered competition, even in home markets, with the more firmly established industries in Britain. Manufacturers complained. Subsequently, many agriculturalists, also, abandoned the free trade ideas, under the pressure of competition with products from America and Russia. The outcome was the tariff of 1879, which marked a return to protectionism. This position, Germany has never since abandoned. On the contrary, duties have been periodically adjusted, usually upward, to meet the supposed needs not only of manufacturers, but of farmers. With respect to the latter, with various parts of the world pouring their surpluses upon the international markets to-day, there seems to be much more potency in the claim of the protectionists than ever before. There are, of course disadvantages in this policy, whether applied to farm products or to the output of factories, since it deprives German consumers of the advantage of buying in low-priced markets. But the people are convinced that it is worth while to bear this burden. The large population must be kept employed, and the most feasible way seems to be through the development of domestic industries. Freer trade would involve long, painful readjustments

to new conditions. And now-a-days, with practically all the world on a protection basis, a change would be out of the question. This is notably the case because excess of producing capacity reigns in practically every field of economic activity, and surplus producers are in quest of freer markets in which to sell their wares.

German tariffs, like those in America and elsewhere, are always in a state of flux. Readjustments are demanded periodically to meet new conditions, or to correct supposed mistakes of the past. Occasionally, the shifts of political power present the immediate reason for the change.

Nor is this all. Theoretical propositions have sometimes played a part in the framing of tariff policies, as was the case with the ideas of Friedrich List and his followers, who favored a balanced economy in which national well-being was to be promoted by a more or less orderly progress along all fronts. This end they believed could only be achieved behind tariff walls.

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CHAPTER X

THE COMMERCE OF FRANCE

If one tests progress by speed, by the development of mass production, by the regimenting of millions of men under systems of minutely divided labor, by power selling, and by feverish quests for external markets, the judgment must be rendered against France as a progressive nation. But it must be remembered that the idea of what constitutes progress is a man-made concept; one people will decide in one way and another in another way, and there is no supreme judge to render a verdict. This must not be taken to mean that factory production, under the power system, is non-existent in France, but that it is less a characteristic of French enterprise than with other industrialized nations. In her system there is a mixture of the old with the modern, of great quantities of goods turned out in small shops largely by hand labor, and, on the other hand, of other large quantities produced in factories operated on modern principles, except, perhaps, that even the largest of the French establishments has not attained to anything like the proportions of similar industries in the United States or Germany. Possibly, this condition reflects the ideas of many of the people who prefer to continue work as small entrepreneurs—largely masters of their own fate—to the merging of their efforts into large scale industries where the worker is merely an employee.

The Position of France Among the Great Trading Nations

French methods of foreign trade development have not been characterized by attempts to win and hold large-scale, or widespread, markets. English and German, and for that matter, American, policies have not enjoyed a vogue in this country. To-day, the best customers of France are her immediate neighbors—Belgium, Germany, the United Kingdom, and Algeria. In 1929 these four divisions took 48 per cent of French exports, and in the succeeding three years, 49 per cent, 50 per cent, and 46 per cent. In 1929 the United States was a customer only to the extent of 6.7 per cent of France's total exports, and only 4.9 per cent in

1932. This does not tell the whole story of regional concentration of exports. In 1929, shipments to her twelve best European customers amounted to 58 per cent of the total, and if Algeria, a controlled territory, were added, the percentage would be 68 per cent. In 1932, for the same divisions the percentage was about 67. In this respect France has not made the same bid as the United Kingdom for great overseas markets. Exports to French colonies, excluding Algeria, were about 10 per cent of the total in 1929, and about 14 per cent in 1932.

Germany also trades largely with other European countries. But in this case, although separated by political boundaries, much of the continent in which Germany enjoys a large trade may be considered as a part of one industrial region. In many cases the products supplement each other, and to some extent this commerce is with former German territory. A much smaller proportion of British export trade is with Europe. In 1929 it was only about 30 per cent of her total, and in 1932 about 36 per cent.

It will appear from the table given below that French foreign commerce has expanded consistently during the present century, although it has not developed as rapidly as that of the United Kingdom, Germany and the United States. Political and economic factors, and

TOTAL FOREIGN TRADE OF THE LEADING COUNTRIES; AVERAGE BY FIVE
YEAR PERIODS (1901-1930)

(IN MILLIONS OF DOLLARS)¹

PERIOD	UNITED KINGDOM	UNITED STATES	GERMANY	FRANCE
1901-05	\$4,424	\$2,426	\$2,806	\$2,224
1906-10	5,440	3,124	3,898	2,910
1911-15	6,347	4,082	4,998	3,430
1921-25	9,021	7,847	1,684	5,311
1926-30	9,605	8,810	6,210	4,413

even human ideals, are involved in the explanation of this condition, but in what proportions these factors are blended, no one can assert with certainty. French writers have extolled the individualistic character of their countrymen. To the extent that this trait prevails, it militates against the collective spirit which is necessary if industries are to be en-

¹ Figures are for general imports and exports. German figures for 1921-1925 are for imports for consumption and exports of German products. Cf. *Foreign Commerce Year-book* (U. S. Department of Commerce), 1933, pp. 56, 142; *Statistical Abstract of the United States*, 1932, p. 425.

larged and integrated. Such movements mean not only the merging of modes of thought, but consolidation of capitals, and the surrender of business initiative, except for the few who manage.

But this is not the whole explanation of the slower industrialization of France. Governments were less stable in this country than in Britain. On several occasions during the nineteenth century, when Britain was experiencing her greatest growth, France was stirred by revolutions. Again, the Franco-Prussian war deprived her of some of her best industrial territory. For many years, even when not actually engaged in wars, France has felt it necessary to be prepared for an impending conflict; hence, men and funds which might have been used for industrial purposes were diverted to military uses. In spite of the heritage of these conditions, France has succeeded in maintaining her position as the fourth most important trading nation.

Population

One remarkable feature connected with French population is the slow rate at which it has increased. The annual increase during the years from 1801 to 1876 was very small. It was estimated about 1875 that while the population of England had approximately doubled in the preceding fifty years, about 160 years would be required to achieve this same result in France, taking into account the shifts of territory in 1871.

Moreover, the population has been practically stationary since 1870. At present the birth rate exceeds the death rate by only a small margin. In the years from 1922 to 1926, in a population of 40,700,000 (1926, new boundaries), the excess of births over deaths was only 70,117. Moreover, only small additions have been made to the population by immigration. In recent years, foreign workers have been brought to the country under contract, but the number has not been large. If France is on the eve of a new industrial expansion it is difficult to see how this can take place without drawing large numbers away from the farms, or with the other alternative, the addition of a great number of foreigners. Increase in the birth rate is hardly imaginable under present circumstances.

Further, at present, the population is not as highly concentrated in urban centers as in other industrialized nations. In 1921 only 46.4 per cent could be put in this class, while in Germany about the same time the percentage was 64.1 and in England and Wales about 79.3. In fact, the urban concentration is even less than in the United States, notwithstanding our vast agricultural area.² For a country which aspires to

² Lippincott, *Economic Resources and Industries of the World*, p. 571.

expand industrially, numbers serve two very important purposes: first, they provide the labor force with which the work is to be done; and second, they supply the markets in which the goods are consumed. So much the better if the population can command a large per capita income, if it enjoys a high standard of living, and if it can work with equipment which increases its output.

Agricultural Conditions

With respects to foodstuffs, France is much less dependent on imports than either the United Kingdom or Germany. The area susceptible of cultivation for necessary products is at least as large as that in Germany and more than double that of the United Kingdom. On the other hand, the population which looks to this area for a large part of its sustenance is about one-third less than that of Germany and about one-ninth less than that of the United Kingdom. France, also, has the advantage of drawing upon her nearby North African possessions—notably Algeria and Morocco—for large quantities of foodstuffs. From these sources are imported wheat, flour, potatoes, peas and beans, fruits and nuts. Wine, often used for blending with the French product, is usually the principal export from Algeria to France. The shipments include a considerable number of other agricultural products such as tobacco, wool, and limited quantities of cotton. In 1929, foodstuffs amounted to about 15 per cent of the total imports into France, and in 1932 to about 21 per cent.³ We have already indicated that the foreign food bill of both Germany and the United Kingdom is represented by a much larger percentage.

Agriculture has always been one of the mainstays of the French people, and it is to-day one of the leading occupations. More than half the people live in the rural districts. Small holdings are a feature of this farming. Many parcels consist of only a few acres, although there are a considerable number of large farms. Many of the enterprises are too small for effective cultivation, even under a system of coöperation. The work must be done largely without the use of power devices, and the returns are relatively small, compared with countries where agriculture is handled in more businesslike ways. Yield is a matter not only of the system of cultivation but of climatic conditions; but taking these into account, the French farmer is able to get less wheat per acre than work-

³ Figures include sugar, coffee, and cacao.

ers in England and Germany, where the return is usually in excess of thirty bushels. In France it ranges from five to ten bushels less. It should be remarked, however, that the yield is higher than that in the United States; but in this case, the difference is accounted for by various practices that accompany our extensive system of cultivation. Likewise, in the case of potatoes, one of the important French crops, the yield is often less than half that of her neighbor, Belgium, and much below that of Germany and the United Kingdom.

France produces a considerable variety of farm products, including cereals, vegetables, fruits, and feed crops. The output of wheat is sometimes more than double that of Germany and five or six times that of the United Kingdom; production of oats is usually more than double that of the United Kingdom, but considerably less than that of Germany. France is the third or fourth European producer of sugar beets, ranking behind Russia, Germany, and sometimes Czechoslovakia. Her output of wine always exceeds that of any other European country (1,258,300,000 gallons in 1932), although Italy sometimes produces nearly as much (1,220,400,000 in 1932). All in all, the large output from French fields relieves the country from considerable dependence on imports. A summary of the leading crops is given in the table on page 160.

In the development of French agriculture in recent years much emphasis has been laid on mutual help. Coöperation in various forms has become an important activity, notably since the turn of the present century. In some respects this tends to perpetuate small holdings, although other causes are involved, such as laws which encourage the division of property, and a high protective system which defends even the most inefficient farmer from competition with lower cost producers in North America, Argentina, and Australia. The earlier associations seem to have been mainly educational, existing for the purpose of disseminating agricultural information and for the encouragement of better methods of farming. But in recent years they have become interested chiefly in the business aspect of this type of enterprise. This is evident in the organization of societies for collective buying of supplies, coöperative selling and credit, and occasionally in some forms of insurance.

Compared with other industrial nations, France still maintains a dominant interest in agriculture. We have already indicated the relative position of this country in the production of cereals. In 1932 French farms contained about 15,400,000 cattle, 6,300,000 swine, and 9,800,000

MODERN WORLD TRADE

COMPARATIVE OUTPUT OF CERTAIN FARM PRODUCTS

WHEAT (In Millions of Bushels)

	1909-1913 AVERAGE	1921-1925 AVERAGE	1932
France	326	291	331
Germany	131	99	184
England and Wales	56	59	41

OATS (Millions of Bushels)

France	368	301	332
Germany	527	363	458
United Kingdom ⁴	207	163	160

RYE (Millions of Bushels)

France	53	41	34
Germany	368	256	329
United Kingdom	Negligible		

POTATOES (1,000 Bushels)

France	526	451	583
Germany	1,373	1,304	1,727
United Kingdom ⁴	254	190	207

SUGAR BEETS (1,000 Short Tons)

France	6,544	4,472	7,743
Germany	14,679	10,595	8,681
United Kingdom	Negligible		
Russia	10,636	3,171	15,432
Czechoslovakia	8,238	7,229	4,367

sheep.⁵ This is not enough to relieve the country entirely of dependence on imports for either meat or dairy products, or for wool. France imports small quantities of all these.

This country pays the penalty for the heavy protection granted to her farmers in the form of high prices which consumers are forced to

⁴ For 1909-1913 figures include Irish Free State. Cf. *Foreign Commerce Yearbook* (U. S. Department of Commerce), 1933, pp. 316, 318, 319, 320, 322.

⁵ The number of cattle, swine and sheep in 1932 are given below:

	Cattle	Swine	Sheep
France	15,434,000	6,398,000	9,845,000
Germany	19,123,000	22,800,000	3,401,000
United Kingdom . . .	8,292,000	3,564,000	27,115,000

pay, but she considers that there are offsetting advantages such as relief from the chaotic conditions which often exist in the marketing of international staples, the maintenance of relative stability for her agriculture, and upon occasions, freedom from the drain upon her financial position which might occur if she were compelled to become a large buyer in international markets.

As a result of the conditions discussed above France is much less of a market for foreign foodstuffs than the United Kingdom, and for some products is of even less importance than Germany. The annual average for meat products ⁶ imported into the United Kingdom during the four years ending with 1932 was 3,258,000,000 pounds. The imports into France were only 142,000,000 pounds and into Germany 200,000,000 pounds.⁷ In the same period Britain's annual import of wheat was 205,000,000 bushels, and this says nothing of flour; French imports were 63,000,000 bushels, and those of Germany were 46,000,000.

Physical Resources

The nature of the resources of a country is always one of the important determinants of the character of its foreign trade. Other factors are involved, such as the social and industrial ideals of the people, the character of their political institutions, and the stage of industry to which the people have attained. But in any event, industrialization presupposes either a considerable local supply of mineral and other products, or free capital with which the products of mines, soil, and forests may be bought.

Of the minerals in France, iron and coal are the most important, but there is a notable deficiency of others which to-day often form the basis of great industries. Among these are copper, lead, zinc and petroleum, to say nothing of the rarer elements which at present are essential for a highly developed metallurgical industry. For this latter group France must depend on external sources. In recent years, attempts have been made to soften some of the disadvantages due to the lack of essential mineral raw materials by encouraging local smelting, or in the case of petroleum products, refining, of imported raw materials; but while this tends to create new local industries it does not overcome the disadvantages of lack of home supplies of the crude stuffs.

The changes in boundaries, as a part of the peace adjustments subsequent to the late war have affected materially the position of various

⁶ Does not include lard.

⁷ Meat, game, and poultry.

countries as producers of iron ore, and to some extent of steel. France was one of the chief beneficiaries because of the return of Alsace-Lorraine. During the period between the loss of this territory, after the Franco-Prussian war, and its return, France was compelled to rely upon mediocre local resources or upon import. Within the country are scattered iron ore deposits, but the only reserves existing near coal are in the neighborhood of Le Creuzot. Hence, for much of the industry, it was necessary to bring iron ore to coal, or the reverse. The loss of her former resources in 1871 was a great blow, not only because it deprived the country of one of the important resources in Europe, but also for the reason that it came at a time when the richer nations were undergoing greater industrialization due to the new needs for railway, structural, and various industrial steels. Real progress in the industry began in the early years of the present century. In the period from 1890 to 1900 France produced scarcely more than 4,000,000 tons of ore, as a yearly average, and not much more than double this amount during the succeeding decade. The output rose to 21,900,000 tons in 1913, and, as an annual average for the four years ending with 1930, to 46,700,000. As a result of these changes, France has become the second most important producer of this material in the world, ranking after the United States.

This development has largely relieved the country of dependence on external sources for iron ore and for crude forms of iron and steel, although not entirely. It is still necessary to use foreign ores for mixing with the domestic product, and where plants are favorably located for receipt of foreign ores, to use imported material instead of the domestic product. The annual average import of ores in the four years ending with 1932 were only 1,636,000 and of iron and steel only 316,000 tons. On the other hand, France is a large importer of machinery, between one-fourth and one-fifth of the supply coming from the United States. France, to-day, is less dependent on foreign sources for both ore and the cruder forms of iron and steel than either the United Kingdom or Germany.

The condition with respect to coal is not as favorable. Although the resource is rather widely distributed, the reserves are not large. The fields in the northeast, extending through Belgium into Germany, are the most important. But to-day home production falls much below domestic needs. The average annual production from 1926 to 1930 was 53,500,000 tons, about one-third of that of Germany (exclusive of lignite) and one-fourth that of the United Kingdom. Imports over this period

averaged about 22,000,000 tons a year. In fact, in terms of value, coal is one of the largest imports.

It is apparent from this discussion that nature paid no attention to future political boundaries in her distribution of resources, and the present results are sometimes embarrassing. The iron industry of France must be worked in connection with coal from Germany and elsewhere. Whether iron will move to coal, or coal to iron, will depend on the development of economic factors, of which transportation, managerial skill, and potential markets, are important constituents. From present indications, both coal and iron producers in the adjacent countries will be forced to work out their problems by some form of coöperation. From the point of view of the needs of trade, there is great merit in the suggestion for a United States of Europe. Possibly for the great bulk of the commerce which moves over this continent, the exchange of goods is merely to supplement local deficiencies. But political boundaries are a great impediment to the freedom which commerce requires for its fullest development. The United States of America is a splendid example of what can be achieved by commerce when it moves throughout a free territory.

France contains a number of minor resources upon which are sometimes based rather important industries. In this class are building stones, natural cements, fertilizer materials and plasters from the Paris region. The fine clays existing in certain areas have made possible a considerable development of the porcelain and pottery industries. But of the non-ferrous metals France possesses only meager supplies, and consequently, she must rely on various parts of the world to administer to her needs. However, France produces considerable quantities of bauxite, the mineral from which aluminum is obtained, and potash, for which she is one of the few commercial sources in the world.

This may be the age of coal, or of iron, as some would have it, but the honors certainly ought to be shared with copper, for this is also an age of electricity. Wherever this power is produced or transmitted copper is the element which makes the enterprise possible. It has the highest conductivity of any metal except silver, but unlike the latter it exists in large enough quantities to be available for industry at reasonable prices.

France consumes large quantities of this metal, relying on imports to supply most of her needs. The average annual imports from 1929 to 1932 were 343,157,000 pounds; thus, France is one of the largest markets in the world for this metal, ranking with Germany, the

United Kingdom and Belgium. France is also a large importer of lead (252,800,000 pounds as an average for the four years ending with 1932) and of other non-ferrous metals.

Textiles

The French textile industry is no less dependent on external sources for raw materials than for the varied metal manufactures. This is notably the situation with cotton. In ordinary times, imports have been in excess of 800,000,000 pounds a year. France produces locally considerable quantities of wool and silk. At one time, about three-quarters of a century ago, this country satisfied practically all its needs for wool from local production. The same condition was largely true for raw silk.

Sericulture is an ancient enterprise in some of the Mediterranean countries, dating back to the sixth century, when the silkworm was introduced from China. After centuries of prosperity, the industry has lost its old significance, and the center of production of raw silk has receded to its old home in China and Japan. To-day, the Mediterranean area scarcely produces 10 per cent of the total for the world, and the output of France is only a fractional part of one per cent. Production has been declining steadily during the last twenty years. It amounted to only 176,000 pounds in 1931 compared with 992,000 pounds as an annual average from 1909 to 1913. Some eighty years ago, the industry was afflicted with pests which may have temporarily retarded production, but modern science has found a way of overcoming this difficulty. The present troubles of French sericulture are more largely in the economic field, such as higher local costs of production for raw materials, the development of the rayon industry, and the loss of international markets for certain kinds of silk fabrics. France now imports raw silk, chiefly from Japan and China. In normal years receipts of the raw product, including floss, amount to about 20,000,000 pounds; this compares with from 60,000,000 to 90,000,000 for the United States, which since 1875 has developed the greatest silk manufacturing industry in the world.

Various Imports

What we have said hitherto refers to some of the basic raw materials. But France, like other industrialized countries, must now look far and wide for other stuffs which are required either for local consumption or for fabrication into goods for the external trade. France

is one of the important world markets for oil seeds and vegetable oils—linseed, peanuts, copra and cotton-seed oil among others—of various petroleum products, of flax, tow, jute, leather, wood pulp, paper, rubber, furs, hides and skins, and tobacco. The great bulk of the imports are in the class of raw and partly finished stuffs.

Manufactures

It may be gathered from what we have said with respect to physical resources that France has very little of domestic raw stuffs for external shipment. Her export commerce rests mainly on the output of her shops and factories. The export list contains a few large items such as fabrics of cotton, wool, rayon, silk; also various metal manufactures, and chemicals and dyes; but, on the whole, this trade is characterized chiefly by the shipment of a large variety of articles, the aggregate value of which sometimes runs into large amounts. Further, it appears that the position of France as an exporter depends more on the marketing of goods upon which her workmen have impressed their skill than upon standardized articles which move into international commerce from the other industrialized countries.

Various qualifications are required to the statement that France has succumbed less to factory methods than the other great nations. But it is true that in certain lines of industry hand methods still retain a prominent place.

According to a census of 1926, the manufacture of textiles and clothing employed the greatest number of workmen of any industry and the greatest amount of power, except in the manufacture of iron and steel. In 1932, France contained about the same number of cotton spindles as Germany, but only one-third the number in the United States, and one-fifth the number in the United Kingdom. Although this country is an important exporter of cotton fabrics, the greatest market is at home. Measured in terms of value, her foreign shipments of cotton fabrics are only slightly less than those of Germany, but about one-ninth those of the United Kingdom.

The introduction of factory methods into the textiles proceeded at a much slower pace in this country than in England. The Industrial Revolution, in its various aspects, had been under way almost a half century in the latter country before it began to make an impression on industrial methods in France. But the change came, although slowly, and cottons were the first to feel the effect. The progress of the industry has been affected, sometimes adversely, by changing political

policy, and occasionally, by indecision on the part of the manufacturers themselves. The loss of Alsace-Lorraine in 1871, which contained the more progressive elements in the industry, was a severe blow to what had already been attained. In more recent years, however, manufacturers have gone over more and more to mechanical methods. Similar changes have taken place in weaving. So also, in the production of silks and woollens the use of mechanical devices has made great headway, although with certain types of fabric, hand methods are still the approved form.

Progress in the iron and steel industry also was slow until after 1850. Here too, the loss of territory retarded development. But after 1880, the industry assumed a new character. This manufacture now employs the largest amount of power, and after the textiles, the largest number of workers.

Commercial Policy

Throughout the greater part of its history, since the Revolution, France has operated under some form of protective system. In this, as in various other countries, some leaders were impressed with the free trade ideas that were making progress in England. For a period of upwards of twenty years (1850-1871) the policy favored low duties and liberal commercial treaty arrangements. By a treaty with England in 1860, this country abolished duties on a number of French products and reduced the imposts on wine and spirits. On the other hand, France made a material reduction in rates on many articles imported from England.

The merits of such measures, as dominant forces in promoting general economic improvement in France, have been a subject for debate. On the one side were those who insisted that the country was headed for industrial ruin, and on the other, those who could point to a decided increase in French commerce after 1860. Industrial relations are complicated matters, and what undoubtedly happened was that certain classes, notably merchants and certain groups of manufacturers, received an advantage, but other producers felt the pressure of foreign competition.

At any rate, the Franco-Prussian war brought a change in foreign trade ideas. United Germany subsequently adopted protection. As a result of the war, Napoleon III, who had been chiefly instrumental in promoting more liberal policies, was removed. Depression in business, and increasing difficulties of French farmers in holding their own in

competition with products imported from abroad, were reasons for a reversal of policy.

With the introduction of the tariff of 1881, the country embarked upon a course which it has never since abandoned. Duties have been readjusted from time to time, but the thought has been to secure adequate protection. In this country, the theoretical merits of the case of free trade versus protection has little weight in face of political considerations. Protection is the policy which the majority of the people seem to favor. The development of foreign trade thus becomes of secondary consideration. The more important consideration is the defense of the home market and its preservation for those who live and work in it. The international distress which came as an aftermath of the late war was the occasion for other restrictive methods in France, as elsewhere. But this is a matter for subsequent discussion.

Colonies

During the European wars from 1760 to 1815 France lost most of the great colonial empire which she had built up since the earliest days of exploration. But she has since reconstructed another which ranks in extent second to that of Britain. Algeria alone covers a greater area than that of the parent country (222,200 square miles); the French Protectorate of Morocco contains 162,100 square miles, and Tunisia 48,300. These north African possessions contain a variety of resources, some rather abundant. Algeria produces for export iron ore, pyrites, zinc and lead ores, and phosphates. Some of the products of the field are rather important items of external trade, such as wheat, oats, potatoes, wine, olive oil and dates. The combined foreign trade (exports and imports) of these three divisions amounted to about \$649,800,000 in 1929 and to \$511,000,000 in 1932. The greater portion of this commerce is with the home country.

French Equatorial Africa, formerly the French Congo, covers over 915,000 square miles, with an estimated population of 3,100,000. So far as is known, the chief wealth lies in its great forest resources. Okume wood supplies over half the exports. Cacao and coffee are produced by the plantation method; the fields produce, also, peanuts, manioc, millet, and rice. French West Africa is even more extensive, with some 1,447,000 square miles. The forests yield rubber, palm kernels, kola nuts, and cacao. Mineral resources are supposed to be extensive, but as yet they have received little or no development. Although these territories, hitherto described, possess great latent possibilities, they are, for the

most part, still in the state of nature, and the application of vast amounts of capital and man power will be required to fit them for service to industry and commerce.

Madagascar is somewhat larger than France, but as yet it is commercially of little importance. The population in 1930 was about 3,700,000. The total commerce, even in normal years, is not in excess of \$50,000,000. The exports include lima beans, vanilla, coffee, cacao, cloves, and such minerals as mica, graphite, phosphates, and corundum.

French Indo-China, including Cambodia, Annam, Tonkin, Laos, and the leased territory of Kwangchow have an area of 284,000 square miles and a population of 21,000,000. Rice is the principal product and normally supplies more than half the export. The territory contains certain minerals which are important for commercial purposes, such as zinc, tin, tungsten, and phosphates. We have given only the larger divisions of the French empire; but the home country controls various other lands scattered here and there over the globe.

It is doubtful whether France obtains trade or other advantages to compensate for the expense of administration. The proponents of colonial power think that the benefits lie in the future. They hope that colonial development will add greatly to the industry and wealth of the home country, and perhaps will contribute something to national prestige. This outcome hinges on a number of circumstances of which systems of colonial administration are prime factors. Hitherto, with respect to France, the policy latent in this system has not been clear. Sometimes it seems to have been directed to a process of assimilation by which the commerce and industries of the colonies might be merged into some form of economic organization dominated by the home country. Sometimes there is a suggestion of colonial autonomy in which at least the major divisions will be permitted a large measure of freedom in working out their own industrial and commercial salvation.

The administration of wide-flung dominions with dissimilar, and sometimes conflicting, interest imposes an almost impossible task on the home country. This task becomes more difficult with economic expansion largely because development emphasizes the differences. In many cases the natural markets for colonial products are not in the home country, and the cheapest sources of imports are sometimes beyond the dominion walls. The conditions are further complicated by the need of bringing trade, or credit, balances into harmony, and

they grow more complicated with the economic development of the colonies.

Merchant Marine

France to-day can hardly be ranked as one of the great carrier nations. Her merchant tonnage is less than one-fifth that of the United Kingdom, and is less than that of Germany, Japan, and Norway, and only slightly in excess of that of Italy and Netherlands. The actual tonnage in 1932 was about 3,500,000. The position of France has changed to a marked degree since 1880, when this country ranked second among the nations in merchant tonnage. Attempts have been made to build up the merchant fleet under bounty arrangements; but, on the other hand, duties on various ship-building materials have largely offset any advantage that might have been obtained from governmental grants. In addition, French maritime organization is probably less effective than that of some of the other great nations.

Balance of Trade

The development of French foreign trade since 1900 is shown in the following table.

FRENCH FOREIGN TRADE; AVERAGE BY FIVE YEAR PERIODS; 1901-1930
(MILLIONS OF DOLLARS) ⁸

YEARLY AVERAGE	GENERAL IMPORTS	GENERAL EXPORTS
1901-1905	\$1,126	\$1,098
1906-1910	1,509	1,401
1911-1915	1,959	1,471
1916-1920	4,766	1,892
1921-1925	2,792	2,519
1926-1930	2,848	2,669

It will be observed that, except for the war years, the physical exports nearly balanced the imports. In fact, the difference in the period ending with 1905 was only \$28,000,000, and for that ending with 1910 it was \$108,000,000. During the war years France was a large importer of munitions and supplies, and at this time, the imports far exceeded the exports. Thereby hangs a part of the story of the inter-allied war debts, with many-sided arrangements, but with Britain, the United

⁸ *Foreign Commerce Yearbook*, p. 41.

States, and France being the largest factors involved. Since the war, physical imports and exports have again been brought into reasonable balance.

This condition presents an impressive contrast, particularly with the United Kingdom, where there is always a large unfavorable balance of trade, and to a certain extent with Germany, which also has incurred considerable unfavorable balances.

This does not mean that the invisible items are of little significance. These play a part, also, in the foreign relations of this country. As with the other richer nations, France has large investments beyond her borders. Loans have been made not only by individuals and companies, but by the government itself. Notably since the close of the war, this country has advanced funds to certain countries which might be allies in case of another conflict. Large sums have been invested in French colonies, and considerable amounts in Argentina, Brazil and Mexico, not to mention them all.

Large portions of these loans are in state and municipal loans, and other portions are in mining enterprises, industries, foreign banking, and in insurance, and shipping. These foreign investments have accumulated steadily since the Napoleonic wars, slowly until about 1875, and then with greater rapidity. In fact, so much capital was invested abroad that at one time it was claimed that industrial opportunities at home were ignored and that the country as a whole was suffering from the migration of funds. No doubt the status of these loans, whether to governments or to industries, has been seriously affected by the economic troubles since 1929, and in many cases they are not productive of an income.

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CHAPTER XI

EUROPEAN COMMERCE

Both in 1929 and 1932 the commerce of the United Kingdom, Germany, and France amounted to about 57 per cent of the trade of all Europe. The five next important nations—Italy, Netherlands, Belgium, Czechoslovakia, and Switzerland—contributed an additional 22 per cent. In other words, the share of the twenty or more other nations was only a little more than 20 per cent of the total.

The Effect of Political Boundaries

National territories in Europe have been rearranged many times during the past hundred years, largely as a result of wars. These changes have regrouped people under different political dominations, subjected them to a change of policies, and of course, have altered to some extent trade relations.

One result of the late treaty of peace was the recognition of the racial or national ambitions of certain of the subject people, and the increase in the number of states. In practically all cases the boundaries are political and not economic. In fact, while the peace adjustments have in a measure satisfied the political, or national, aspirations of the various peoples, they have greatly increased the economic difficulties.

In most cases the countries have their characteristic money units and banking systems, and their own national economic policies. Moreover, the relations are further confused by a multiplicity of tariff, foreign exchange, and other trade control arrangements. Considered as a whole, the European market is much less free at present than in 1913. This condition is even now proving a handicap upon development. In many cases, the twenty-five or more nations are poorly supplied with raw materials, and it is impossible to build up a well-coördinated economic organization. Many are inadequately supplied with both commercial and industrial capital, and in many regions the workers have not been trained to anything but to hand-labor systems of production. Per capita production is small, compared with Germany and France,

and very small compared with the United States, and as a result individual purchasing power is low.

The presence of numerous national borders, as a result of many different economic policies, is a serious handicap in the development of a more orderly and effective economic organization in Europe as a whole. Evidently, two sets of values have come into clash, namely, the political and racial, on the one hand, and the economic on the other. In most cases the peoples of these countries have rated the former as of more importance than the other; but they pay the penalty in higher costs of living, in lower standards of life, and in inability to organize for more effective work.

Thus, the economic condition in Europe is in strong contrast with that in the United States. Here, a great area exists under one national jurisdiction, and an enormous free market supplies one of the greatest incentives to trade. The economic organization is as thoroughly integrated as possible, and the various parts of the country function together with the least possible resistance. Specialized industries may be founded in regions which offer the best economic advantages, and the output may be supplied to other regions without the interference of tariff boundaries, and without the intervention of foreign, or sometimes as in the case of Europe, hostile trade legislation. Moreover, the uniform conditions for trade add greatly to our opportunities for expansion, conditions which are denied to the various countries of Europe.¹

European External Trade Mainly Continental

The larger portion of the foreign commerce of Europe originates within the various countries and finds its chief market there. This means that for most of the nations overseas markets are of relatively small importance. Due to her central position and to her highly developed organization, both for production and sales, Germany enjoys a large percentage of the business. This is notably the case with the nations which surround her borders. Some idea of this relation is given in the table on p. 174.

In some cases, the transient trade must be taken into account in interpreting these results. On the whole, the various European countries are larger consumers of German goods than Germany is of theirs. In a number of cases there are special reasons why certain exporting countries should also find a large market elsewhere. For example,

¹ I. Lippincott, *Economic Resources and Industries of the World*, p. 586.

TRADE OF VARIOUS EUROPEAN COUNTRIES WITH GERMANY

	IMPORTS FOR CONSUMPTION				EXPORT OF DOMESTIC PRODUCTS			
	(PER CENT OF TOTAL)							
	1929	1930	1931	1932	1929	1930	1931	1932
Belgium and Luxembourg	13.8	16.7	16.9	16.8	12.0	11.4	10.3	10.3
Bulgaria	(2)	(2)	23.3	25.9	(2)	(2)	29.5	26.0
Czechoslovakia	24.2	24.2	27.0	26.3	19.4	17.0	15.5	16.2
Denmark	32.9	34.2	33.5	25.9	19.9	16.2	13.4	13.2
Estonia	(2)	(2)	34.1	32.0	(2)	(2)	26.3	26.2
Finland	38.3	36.9	34.9	28.6	14.4	12.5	8.4	8.3
France	11.4	15.1	14.6	12.1	9.5	9.7	9.0	8.6
Hungary	(2)	(2)	24.4	22.4	(2)	(2)	12.7	14.8
Italy	12.6	12.6	13.2	13.4	11.9	12.8	10.7	11.2
Netherlands . . .	30.6	31.7	32.7	30.8	22.9	21.3	19.5	21.4
Norway	24.4	21.5	23.0	21.3	13.0	12.0	11.6	12.1
Poland	27.3	27.0	24.5	20.1	31.2	25.8	16.8	16.2
Sweden	30.7	32.1	33.1	29.3	15.2	14.5	10.4	9.5
Switzerland . . .	25.9	27.9	29.7	29.1	16.5	15.7	14.6	13.9
Russia	21.1	23.7	37.2	46.4	23.3	19.8	15.9	17.4

about one-fifth of the total export trade of Netherlands is with the United Kingdom which takes considerable proportions of its meat, dairy, fish and vegetable products. This is much more the case with Denmark. This country markets more than half its exported products in the United Kingdom—64.1 per cent in 1932. But meat products constitute two-thirds the foreign shipments of this country, and Britain is the principal market.

It might be said in passing that this shift in trade is relatively recent history. The growth of the Danish export meat-business dates back to about 1887. In that year, Germany, in order to protect her own hog-raising industry, prohibited the import of live and dressed hogs. Danish producers were forced to find another market, and they turned to the United Kingdom. Meanwhile, these farmers encountered about the same difficulties with middlemen's charges as producers in the United States. The Danish solution was to organize coöperative societies both for production and for marketing. The associations sent representatives to study British markets; they imported Yorkshire boars and sows; they sent their hogs to the coöperatives; and in addition, they kept

² Figures not available. For the other data see *Foreign Trade Yearbook* (U. S. Department of Commerce), 1933, pp. 10-135.

accurate records of feeding and breeding. The result was the exchange of an old market for a new.

In 1932, over 70 per cent of German exports were to countries on the continent; some 58 per cent of the exports of Netherlands, 50 per cent of those of Italy, 70 per cent of those of Czechoslovakia, and 60 per cent of those of Switzerland had the same destination. The ratio is even higher for some other countries. All in all, Europe supplies the best market for the output of its various economic enterprises. This is a necessary outcome considering the fact that these nations are in different stages of industrial development, in different positions as to wealth accumulation, and endowed with different resources and with different capacities for production.

Whatever the man-made industries may be, nature has not distributed her products over the continent with equal abundance. Some regions have been adequately favored; others have not been favored at all. The presence of political boundaries, which do not coincide with economic regions, has led to many artificial methods to stimulate this, or that, industry which a country feels is necessary for its welfare. But nevertheless, the economic handicaps persist, and commerce is called upon to surmount the barriers.

The maldistribution of minerals, from the point of view of national needs is notable. Whatever the stage of their industry, all these nations need coal, iron, tools, implements, machinery, copper, lead, and zinc. But these minerals exist only in a few places, and often not in sufficient quantities to make their exploitation worth while. Consequently, these minerals, or the products which are based upon them, are important items in the international trade of the continent. The same remark applies to timber. Some regions are well-endowed in proportion to their needs; others are not. Thus some nations find it to their advantage to exchange lumber and timber products for goods which they cannot produce to advantage. Practically all European countries produce the cereals, not infrequently specializing in the kinds which suit their tastes, sometimes with a surplus for export. Varying climatic conditions also make for differences in products. The Mediterranean areas are large producers of grapes, wine, olives, and olive oil, and some citrous fruits. These also enter into the international exchanges of goods. Differences in types of workmanship and industrial skill, and sometimes the pursuit of traditional industries, are further causes for the differences in products. Within the continent, therefore, there is a wide basis for the interchange of goods. The economic development

of Europe over the past half-century has emphasized these differences and has supplied the occasion for commercial expansion.

We cannot trace this trade in detail. Some examples will suffice. Some of the northern countries are well-endowed with forest resources; thus lumber, or wood, is exported in one form or another, such as boards, planks, shooks, veneers, woodpulp and newsprint. Sweden, Finland, and Norway deal in these products. These are also important exports of Latvia and Lithuania. In addition, these countries have meat, poultry, and dairy products for sale. Swedish iron ore is required in a number of European countries, and this nation exports, also, sizable amounts of iron and steel and machinery. Matches are partly a product of its forest industries. Fish, either in bulk or canned, are one of the most important exports of Norway; but she sends to other countries wood, pulp, newsprint, iron ore, partly finished iron and steel, aluminum, nickel and zinc. All these countries are importers of wheat, rye, flour, fruits, sugar, textiles, coal, and machinery—the products of other European regions.

The three small countries along the central western rim of Europe—Denmark, Netherlands, and Belgium—are poorly supplied with mineral resources. Denmark has none, Netherlands and Belgium produce coal, but both are also importers of this commodity; Belgium is also a producer of zinc. Denmark relies mainly on the products of her agriculture to maintain her export business. This country produces such cereals as wheat, rye, oats, and barley but the crops are small because of the limited area. However, the fields usually produce a higher yield of wheat than in any country in the world—43.5 bushels in 1932, and 40.8 bushels as an annual average from 1926 to 1930. Intensive methods characterize her farming and the physical results justify the efforts; but it is a fair surmise that the workman pays the cost in a relatively low return for his hard labor. This nation has succeeded in building up a surprisingly large foreign trade, considering its limited area of 16,500 square miles and population of only 3,500,000. This is an illustration of what the human resource can achieve even when surrounded by unpromising natural conditions. The total foreign trade expanded from about \$281,900,000 as an annual average from 1901 to 1905 to \$693,300,000 for the five years ending with 1925, and to \$885,200,000 for a similar period ending with 1930. The exports of bacon, canned and other meat products, lard, milk, butter, fresh and preserved eggs account for about 70 per cent of the foreign shipments, and of these bacon and butter are by far the most important.

The Netherlands, also, depend to a certain extent on the product of the fields for an export business. Such shipments often amount to more than 30 per cent of the total. These include, in addition to the customary meat and dairy products, various kinds of fresh vegetables, flower bulbs, and plant seeds of various kinds.

This country has two advantages which are not possessed by Denmark, which incidentally afford greater diversification for its business enterprise and wider opportunities for the investment of capital. One of these is the development of a number of manufacturing enterprises, and the other is a colonial empire of rather large dimensions. The shops and factories produce both for home consumption and for export. Shipments abroad consist of iron and steel, electrical devices, the textiles, cocoa and chocolate, margarine, and paper, among others.

Success in world trading is nothing new for the Dutch. They have been engaged in this type of enterprise for a number of centuries. As commercial rivals of England in the seventeenth century, they not only built up a large overseas trade, but developed a commercial organization which involved widespread trade connections, the operation of a large merchant marine, and institutions to deal in money. The Bank of Amsterdam came into existence in 1608. Thus it antedates the Bank of England by more than three-quarters of a century. While it lacked some of the functions of a modern bank, it was of great assistance to traders in handling of accounts and in making transfers of funds. The Dutch were also pioneers in the establishment of trading companies which were great agencies in the founding of colonies and development of trade. While this country has continued to expand commercially, it has lost relative position among the greater nations, which possess vastly greater physical and human resources upon which to build. On the other hand, although suffering various fortunes, the Dutch were able to keep possession of the greater part of their colonial empire.

Netherland India to-day, the largest portion of the empire, covers over 733,400 square miles and has a population of 60,700,000. This includes Java and Madoera, Sumatra, portions of Borneo, the Island of Celebes, the Moluccas, and a number of minor groups, some of which are famous in history as the original sources of spices. While the spice trade still has a small place in this economy, the hand of modern business enterprise has developed other products which are of far more significance to commerce. On this side of the Atlantic, Surinam, or Netherland Guiana, is less important, although this area seems to

contain latent possibilities. The chief forest product is balata, but this has been overshadowed by other forms of rubber, particularly since the rise of the plantation industry. The colony was once a principal source of cacao, and to-day this commodity is among the chief exports, which include, also, raw sugar, coffee, coconuts, and bananas. Bauxite and gold are also exported.

From the point of view of diversity and richness of resources Netherland India is one of the most valuable possessions of any nation. If some of the older exports, such as spices, tea, coffee, have lost relative position, their place has been more than made good by the rising demand for newer classes of commodities. The automobile makes use of rubber and petroleum products of which this area yields large quantities. The canning industry would be in straits without the large quantities of tin which Bangka and Blitong supply to commerce. In addition, tobacco from Sumatra, and cane sugar from Java, still hold a high place in the commerce of these possessions; and this says nothing of the larger commercial use of copra, coconut oil, palm oil, kapok, copal, and cinchona bark. In value as an export, sugar holds the first place (\$123,300,000 in 1929 and \$39,200,000 in 1932); rubber usually ranks second (\$94,400,000 in 1929 and \$13,600,000 in 1932); products of petroleum third, and copra fourth. Of minor importance, yet in the aggregate contributing a considerable amount to the value of the trade, are tapioca, areca nuts, pepper, sisal, timber, and rattan.

The export trade has expanded remarkably since 1900. It averaged about \$176,500,000 for the five years ending with 1905 and was \$964,900,000 for a similar period ending with 1930. A large amount of this trade now moves directly into the countries of final consumption. Because of the large trade in tin and rubber, of which the United States is the largest consumer, our share in the export trade is sometimes in excess of 10 per cent. The United Kingdom claims 8 or 9 per cent and Germany about 2 per cent. There is in addition a large direct trade with some of the Asiatic countries. The result is that a relatively small proportion of this export commerce passes directly into the markets of Netherland; yet, as raw materials for further manufacture, this country receives from these possessions large quantities of tobacco, sugar, coffee, copra, kapok, to say nothing of goods of lesser importance. Moreover, the home country receives a large return from her investments and is compensated for her handling a considerable amount of the cargoes.

On a smaller scale, the rôle of Netherlands in international economy

is not unlike that of the United Kingdom, namely, that of capitalist and promoter. The enterprise which originates in this country is engaged in the development not only of colonial resources but of those elsewhere.

In 1929 the total trade of Netherlands was \$1,900,000,000; but in 1932, under the impact of the depression, it had dropped to less than half this amount. The foreign trade of Netherlands has increased greatly over several centuries, much more rapidly in the last seventy years than in the preceding period; but she has lost relative position in comparison with her great rival, the United Kingdom, whose total foreign trade is now more than five times greater. But, on the other hand, the commerce of Netherlands is only a little less than half that of France, a country with more than about five times the population, about sixteen times the land area, and with vastly greater colonial possessions. This would seem to indicate that the economic progress of a nation cannot be explained merely on the basis of material things.

Belgium

Unlike its northern neighbor, this country places little reliance on the export of agricultural products for the maintenance of its foreign trade. Its fields produce only small quantities of the cereals, and home production of other foodstuffs does not supply domestic needs. Thus Belgium, like some other highly industrialized countries, looks to the import trade for the supply of such commodities. It is thus an important market for fresh and frozen meats, butter, cheese, wheat, barley, corn, and fruits and nuts.

In fact, Belgium is a part of the northern industrial area of France with which it has various relations. The mines produce coal, iron ore, and zinc. The factory output is crude and finished steel, machinery, including electric wares, various textiles, plate and window glass, glassware, paper and cardboard, among others. All these enter the export trade. The total trade in 1929 was \$1,800,000,000, but less than half this amount in 1932. The best customers for Belgian products are her immediate neighbors—France, Germany, Netherlands, and the United Kingdom—who together take about half the exports and supply a somewhat larger proportion of the imports. The share of the United States in this import trade is usually less than 10 per cent of the Belgian total, and consists mainly of certain food products, cotton, gasoline, lubricating and fuel oils, and lumber.

A colonial empire is a part of the assets, or as some would say,

liabilities, of Belgium. What development these lands are capable of sustaining is yet a matter which the future must decide, although from superficial appearances they seem to be rich in industrial possibilities. The Belgian Congo, to which has been added a portion of German East Africa as a part of the post-war settlement, covers over 920,000 square miles. The population of from 8,000,000 to 10,000,000 is mainly of native stock, with some 25,000 whites to supply the business incentive. The principal agricultural products are palm nuts and palm oil, copal, rubber and cacao. The fields produce also coffee, rice, and cotton, of which the world already has a superabundance. In recent years the production of copper has risen to importance, and transportation outlets have been developed to carry this product to port. This territory was credited with a mine output of 69,000 tons annually during the period from 1921 to 1925, and with nearly 139,000 tons in 1930, in the first case a little more than 5 per cent of the total for the world, and in the second a little less than 9 per cent. Diamonds are the only other product with a considerable market value. The output was 1,908,000 carats in 1929, and 2,520,000 in 1930.

Shipping

Three of the smaller countries which we have just discussed possess a merchant marine which is far out of proportions to the trade which originates within their territory. There has been a large increase during the last forty years, but the development is more marked in these nations than in the United Kingdom. In fact, the tonnage of the last named country did not double during this period. That of Norway increased about two and one-half times, of Sweden about three and one-half times, and of Netherlands about seven times. The combined tonnage of these three nations in 1932 was about 8,800,000 tons, nearly half of which carried the Norwegian flag. This indicates that in addition to profits on the foreign trade the ship-owners derive a large income from the carriage of international freight.

The New Countries

A number of the nations of north central Europe are creatures of the treaty of Versailles. They do not represent a net addition to the productive power of Europe; they are only the results of a rearrangement of old boundaries and the allotment of territory and productive sources, that formerly belonged to the defeated nations, to the new

creatures of the peace. Whether European commerce is better or worse off because of the new arrangements is for anybody to decide. But it goes without saying that in bringing new nations into existence, the diplomats who sat around the conference board created a situation out of which have grown added restrictions on the commerce of the continent, and a larger number of commercial policies to which all the others must make adjustment. Whether the sum total of European welfare will be enhanced by these arrangements remains to be seen.

From the point of view of capacity for foreign trade, Czechoslovakia is one of the most important of the new nations. It was carved out of territory which formerly belonged mainly to Austria-Hungary. It covers about 54,100 square miles, an area only about 5,000 square miles larger than New York State with a population (14,700,000 in 1930) slightly in excess of that of our so-called Empire State. Apparently, the diplomats in re-mapping this territory failed to achieve the ideal of segregation of nationalities. Although the Czechoslovaks predominate (9,600,000), the country contains 3,200,000 Germans, nearly 700,000 Magyars, and 550,000 Ruthenians.

About half the people live in towns and cities, which signifies that for a large number farming of some description is the main occupation. The country produces wheat (53,700,000 bushels in 1932), rye, barley, oats, and corn. Potatoes are an important crop. Czechoslovakia is also one of the largest producers of sugar beets in Europe. As a rule, home production of the cereals does not satisfy domestic needs and varying quantities are imported.

It is a part of domestic policy to encourage the development of manufactures. Coal and iron ore are fairly abundant, in view of present needs, but the mineral resources are not diversified. The combined production of coal and lignite was about 35,000,000 tons, as an annual average from 1926 to 1930, and the output of iron ore was 1,600,000 tons over the same period. In addition, the mines produce considerable quantities of manganese ore. The country is poorly supplied with textile fibers, although it has a considerable industry based on these materials. Cotton is usually the most important of the imports, and wool ranks next. The incoming shipments include, also, varying quantities of the leading cereals, flour, machinery, oil seeds and chemicals. In 1929, the total trade was about \$1,200,000,000, but it was only \$460,000,000 in 1932.

The most important exports from the point of view of money value

were cotton, woolen, and silk fabrics, leather ware, including shoes, porcelain, glass and glass ware, and considerable amounts of iron and steel.

Poland

With the post-war adjustment of territory Poland received upwards of 150,000 square miles, with a population of about 32,000,000. But the boundary adjustments were no more successful in confining a homogeneous population within given borders than was the case with Czechoslovakia. The Poles predominate, but about 15 per cent of the population is composed of Ruthenians, about 3 per cent Germans, and the remainder distributed among four or five nationalities.

Agriculture is the main occupation of the people. In fact, if we may judge the economic bent of the people by the extent of urban concentration more than 75 per cent have chosen agriculture as their main source of living. From 25 to 30 per cent of the total exports are made up of crude or partly finished products from the field. Wood and its manufactures are usually the most important with coal and various metals in second or third place. The mineral resources would support considerable manufactures if the subsequent course of development takes this direction. The present output includes coal, petroleum, natural gas, iron ore, potash, and lead and zinc. Practically all these are enumerated among the exports in some form.

In normal years, more than 25 per cent of the trade of Poland, both imports and exports, is with Germany. The share of Czechoslovakia is from 5 to 10 per cent. Austria receives about 10 per cent of Polish exports and supplies to Poland about 5 per cent of her total imports. Thus it happens with this country, as with a number of others, that the exchanges of goods are more important among neighbors than with those at some distance. The United States imports only very small quantities of Polish goods, frequently less than one per cent of her total shipments. But on the other hand, this country is a considerable factor in exports to Poland. Such trade sometimes amounts to from 10 to 12 per cent of the total. As with a number of other European countries, cotton is the leading American product which enters Polish markets; but the receipts also include bacon, lard, various types of machinery, and automobiles. The total foreign commerce of Poland in 1929 was \$660,000,000. It was less than one-third this amount in 1932.

The occupations in the smaller countries of this section of Europe—Latvia, Estonia, Lithuania, Yugoslavia—are mainly agricultural. Oc-

casionally, the presence of timber affords an added source of materials for export. Yugoslavia has the advantage of a number of mineral resources, including copper, lead, bauxite, iron ore, the output of which adds something to her foreign commerce. In all cases, these nations are producers of the customary cereals, one or the other, predominating; and the production of livestock is a considerable industry, at least in proportion to the size of the countries.

Switzerland

The growth of industry in Switzerland during the last sixty years brought great changes in the character of the foreign trade. Since the "maintenance of the population is now depending on manufacturing industries, importation of raw materials and exportation of manufactured products have become highly characteristic of Swiss trade."³

At present about 75 per cent of the products of the twelve leading Swiss industries are exported. In some cases the percentage is higher than this figure, as with watches, embroideries, silks, silk ribbons, and aniline dyes. Switzerland has practically no mineral resources, except salt and a little iron ore. If the people engage in manufacture, it is therefore necessary to import metallic materials and to export finished products in payment. Except for small amounts of wool and natural silk of local production, the country is also dependent on the outside world for textile fibers.

Switzerland produces wheat, rye, oats, barley, and potatoes, but because of the limited land area from which crops may be grown the output is small, and the outside world is called upon to supply large quantities of foodstuffs. Dairy products, chiefly milk and cheese, are practically the only agricultural goods which enter the export trade.

Swiss scenery ought to be set down as a resource, because it accounts for considerable income to the people in the form of revenue from transportation, hotel bills, and purchases by foreigners within the country. There is a natural compensation for the lack of fuel in the splendid water-power which is being developed on a large scale not only for factory use and for light and heat, but for the operation of railways.

In view of the keenness of competition in international markets in the selling of the more or less standardized materials manufactured under a quantity system, Switzerland has cast her lot with quality. Thus the policy is to produce commodities which are characterized by

³ *Trade Information Bulletin* (U. S. Department of Commerce, 1922), No. 42, p. 2.

excellence of workmanship and by distinction in design. Swiss textile manufacturers, for example, maintain a staff of experienced designers "whose business is to keep informed as to the demands for new types and styles of materials and to anticipate the needs of the market by creating new designs and products." Education of the workers in their chosen crafts, and the enterprise of technical engineers in maintaining production equipment in its most effective form, have helped to give textile manufactures an opportunity for sale in many world markets.

It may be gathered from what has been said that the export trade is composed largely of a number of specialized commodities which are the product of peculiar taste and skill in workmanship. Some of the leading exports are watches, clocks, cotton embroideries and piece goods, silk ribbons, and fabrics of silk and rayon, machinery of various kinds, medicines, perfumery, and chemicals. In 1929 the total Swiss foreign trade was \$916,400,000, but only about half that amount in 1932. The best customers of Switzerland are Germany, the United Kingdom, the United States, France and Italy, which together take more than half the exports.

Spain and Portugal

The mineral resources of Spain are rather diversified, although, in some instances, development cannot be carried on in competition with more prolific resources elsewhere. The mines yield coal, iron ore, copper, lead, zinc, and mercury, and in one form or another these commodities enter the export trade. Spain consumes only a small portion of her output.

The country contains considerable supplies of timber. Oak and beech are important trees along the slopes of the Pyrenees, and the cork oak thrives in the southwest. This variety is of especial interest in Portugal, which exports large quantities of cork (236,000,000 pounds in 1932). The fisheries are a considerable resource for both countries, sardines, anchovies, and tunny being the leading varieties. With few exceptions, manufactures in both countries are of little importance. Barcelona is known for its textiles, Valencia for its manufacture of silks, and Jerez for the production of wine. Both countries are producers of the customary cereals. But from the point of view of external trade, it is the fruit crops that lend a special interest to their commerce. Both countries produce oranges, lemons, figs, grapes, olives, raisins, and filberts and almonds among the nut crops.

The industrial backwardness of Spain is remarkable in view of the

enormous advantages the country possessed several centuries ago when her great colonial empire gave her unrestricted access to large portions of the world and when the new American gold was supplying one of the first stimuli to modern development in other countries. Unfortunately, Spain was afflicted with some of the industrial disqualifications which trouble some of her former colonies even to-day, namely—apathy of the ruling classes with respect to industrial matters, antipathy towards industrial and commercial pursuits among those who might have been the industrial leaders, and the impoverishment of the country by wars. Widespread illiteracy, lack of industrial capital, and insufficient means of transportation are among the present difficulties. There are at present only 9,800 miles of railway in the country, which covers 194,200 square miles. The total trade in 1929 was about \$935,000,000.

Austria, Bulgaria, Roumania

Austria has been one of the greatest sufferers in Europe from the aftermath of wars. As a result of the late conflict her territory has been reduced to about 32,200 square miles with a population of 6,500,000 whereas the empire of 1910 contained 115,800 square miles with a population of 28,700,000. With the loss of territory has also gone some of her best resources and a large portion of her productive capacity. Some mineral resources remain, such as iron, copper, lead, but these are not sufficient as a basis for an important manufacturing industry. The raw materials for a number of her leading manufactures must now be obtained from other countries. The balance of trade has been continuously unfavorable since the close of the war, with the result that a serious problem has been imposed upon the country of finding means of payment for imported goods.

The foreign trade of Bulgaria has never run into large figures. From the point of view of value, it reached its maximum in the five-year period ending 1930 when the annual average for the total trade was \$91,400,000. Agricultural products supply most of the exports, and of these leaf tobacco often amounts to between a third and a fourth of the total. Some persons might find interest in the fact that Bulgaria is one of the very few sources in the world of attar of roses.

Thanks chiefly to its more prolific field resources, and to its output of the products of petroleum, Roumania contributes more than three times as much to international commerce than does its southern neighbor, Bulgaria. In fact, Roumania is one of the important European pro-

ducers of cereals. In 1931 the wheat crop was 135,200,000 bushels and the corn crop 238,700,000 bushels in addition to a rather large production of rye, oats, and barley. In this year, the country exported 16,000,000 bushels of wheat, and in the following 37,500,000 bushels. The production of petroleum is sometimes more than 40,000,000 barrels annually. While the country produces other minerals, the quantities are not large. As might be inferred from what has been said, farming is the chief occupation, and except for the products of petroleum and some timber and its manufactures, the fields contribute almost the only exports.

The interests of Hungary are mainly agricultural, although this country possesses some manufactures of iron and steel, machinery, foodstuffs, textiles, leather and chemicals. A large percentage of the exports are composed of raw or semi-finished farm products. Upwards of 60 per cent of the foreign trade is with the nearby countries.

In terms of value, Greece ranks among the smaller nations of Europe in foreign trade, with a total of not more than \$270,000,000 even in the best years. Here, too, agriculture is the chief interest, but, due to climatic conditions the products are somewhat different from countries further north. Currants, raisins, figs, olives, grapes and tobacco are of chief interest to the international trader. The country produces small quantities of the leading cereals but is also an importer of corn, wheat, and wheat flour. The mineral resources of chromite, emery, iron ore, and magnesite add something to the value of the exports.

Italy

As with other nations on the continent, the development of Italy was retarded by wars and by internal political conflicts. This country was not able to put its home affairs in order until after 1870, and even at that time, because of the poverty and industrial backwardness, the country could not share in the industrial advance of some of the nations to the north and west. Unification paved the way for a national policy with respect to economic matters and also made possible the entry of the country into the field of colonial expansion. In the course of time, Italy built up a colonial empire of considerable proportions, although, as with Germany, she had to take what was left, since the older nations had long ago helped themselves to the more productive parts of the globe. The less promising lands which fell to her lot require the application of large amounts of capital and energy, and whether the return will justify the effort is for the future to decide.

These possessions include Tripoli, taken from Turkey in 1911, Italian Somaliland along the coast of eastern Africa, and Eritrea, along the African coast of the Red Sea.

With a population of 41,800,000 in 1932 Italy ranks with France in numbers, but the area is only a little more than half that of France, which means a greater crowding of people on the soil. This population is increasing steadily. In fact, it seems to be a part of national policy to encourage further expansion in numbers, although there is a serious problem in finding occupation for those who now reside in the country. For a number of years some relief was obtained by emigration. From 1913 to 1926 Italy sent abroad more emigrants than any country in Europe, except possibly Russia. The United States received large numbers; others have gone to Latin America, particularly to Argentina and Brazil. This emigration has also spread over some of the countries of Europe.

Notwithstanding the fact that Italy has made remarkable progress during the last thirty or forty years in the development of manufactures, farming is still a leading occupation. The fields produce large quantities of wheat and corn (276,100,000 bushels and 118,700,000 bushels respectively in 1932), and also considerable amounts of rye, barley, oats, and rice. The home output includes, also, large quantities of potatoes, sugar beets, grapes, olives, and citrous fruits. While Italy is not entirely self-sustaining with respect to foodstuffs, her large home production has reduced dependence on outside sources to relatively small proportions. The imports of cereals and of meat seem to have been declining in recent years, and with the exception of wheat, when the home crops are not favorable, they do not constitute an important percentage of the import trade.

The greatest handicap of the country, in view of its ambitions for the development of manufacture, is its meager supply of minerals. A mere enumeration of kinds of materials produced gives the impression of sufficiency, but an examination of the quantities tells a different story. The lack of iron and coal is the most significant. To some extent the small supply of the latter is made up by the development of water-power, with which Italy is fairly well-endowed. The local supplies of iron ore are obtained from the island of Elbe, copper from Tuscany, and lead and zinc from Sardinia. The production of iron ore amounted to 715,100 tons in 1929 and in 1932 to 458,300 tons. The lead ore output in the same years was 53,400 tons and 34,600 tons, and of zinc ore 224,600 tons and 92,100 tons. It thus appears that Italy must depend on the outside

world for large supplies of coal, coke, various forms of iron and steel, copper, and the products of petroleum, not to mention her need for the minor metals.

A similar condition prevails with respect to textile fibers. In recent years, Italy has developed a large and a diversified textile industry, but except for local supplies of wool and natural silk, which are not sufficient for domestic needs, the raw materials must be imported. Italy's foreign bill for raw cotton is usually the largest item in her trade balance sheet—\$115,700,000 in 1929, which was more than 10 per cent of her total imports. And the requirements for wool, raw silk, and jute add materially to these foreign payments. Italy is also a considerable importer of machinery, of chemicals, and vegetable oils and seeds.

In the export trade the textiles, including cottons, woolens, silks, and rayon, constitute the largest single group; but the foreign shipments cover a great variety of goods, some of which are the products of the art, or skill, which is characteristic of much of Italian workmanship. Shipments of citrous fruits, olives and olive oil, wines, almonds, and limited quantities of dairy and poultry products, are features of the export trade. Between 40 and 50 per cent of the total foreign commerce is with Germany, France, the United Kingdom and the United States. The total trade in 1929 amounted to about \$2,000,000,000.

Russia

If abundance and variety of resources, or even potential markets, were the immediate conditions for economic advance, Russia would be one of the leading industrial nations of Europe. But hitherto, political and social conditions have largely determined the character of her economic growth. During the hundred years or more that modern economic and political ideas were making progress in western Europe, the rulers of Russia adopted the conscious policy of excluding the new thought from the empire. They feared that freedom would undermine the nation. Upon occasions this policy was relaxed, as during a portion of the reign of Alexander 1, but eventually there was return to the old ideas.

Internal relations offered little or no stimulus to development. Roads were intolerable, and the streams offered the only means of carrying the small surplus of certain regions to market. Until the liberation of the serfs in 1861, millions of peasants were bound to the soil. Although the decree of this year alleviated conditions to some extent, it left the serf

a kind of ward of the government. He was still bound to the land and could not depart except by permission. Liberal ideas made their way only slowly, and it was not until the decade from 1890 to 1900 that the dawn of a new order became evident.

Russian industrial policy began to take on a more modern aspect about 1891 with the appointment of Count Sergius Witte as minister of finance and commerce. He saw that national strength lay in a well-rounded development of economic activities. He encouraged the founding of new enterprises and offered facilities for the investment of foreign capital. The latter condition was necessary because the means for the building up of industries could not be supplied from what the Russian people themselves had previously accumulated. Mining enterprises were developed, and in the course of time, capital was invested in the textiles, in the making of iron and steel, and in other industries.

Russia was one of the last of the great powers to take an interest in railroad-building. In 1897 the empire possessed only 13,000 miles of railroad; subsequently, railway building was pushed energetically. But, at that, the mileage in 1923 had increased to only 43,270, and since that date only about 8,000 miles have been added (51,820 in 1932). This is only about two times the mileage of the United Kingdom, and about one-fifth that of the United States.

The empire-building process of Russia has been somewhat obscured by the fact that most of the new territory acquired was adjacent to the old. To a large extent control has merely expanded into contiguous areas. Russia claims little or nothing outside the great land mass known as European and Asiatic Russia. No one can guess what the outcome of the present economic and political experiments will be, but we can say that if the 8,200,000 square miles which are now within the jurisdiction of the present government are consolidated into one economic organization, and if this unit is afforded full opportunity for development, it will become in time the most powerful industrial empire in the world.

The physical resources of this territory are not only widely diversified, but in many cases particular resources exist in great abundance. The mineral deposits of Asiatic Russia, and for that matter, of European Russia, have not been adequately surveyed, but present information indicates that these areas contain all the leading industrial minerals. In addition, there are still many thousands of square miles of unoccupied farming lands which are not unlike those of the central portion of the United States.

The coal resources in the basin of the Donetz have received the greatest attention. But large deposits exist elsewhere, as in the Ural Mountains and in the Caucasus. The deposits in the Urals have been only slightly developed. They are at a great distance from the largest consuming centers, and at present, lack of transportation renders them inaccessible except for industries in the neighborhood. The coal of the Caucasus is poor in quality, but it exists in large quantities. Siberian resources are believed to be extensive, but there has been little or no need for exploitation, nor even for surveys.

Although iron ore does not exist in great masses, as in a few places in western Europe and in the United States, Russia contains many scattered deposits. Copper exists in the Urals, in the Caucasus, in western Siberia, and in Turkestan, among other places. Extensive deposits of manganese are found in the Caucasus. Platinum, gold, and silver occur in the Urals. Hitherto, Russia has been one of the two main sources of platinum—Colombia in South America being the other.

Since 1860 Russia has ranked second as a world producer of petroleum. The Baku fields in western Transcaucasia are still the chief source, although this area has begun to show signs of exhaustion. But other districts give promise of a large output. Russia contains one of the largest remaining sources of timber in the world, containing stands of pine, spruce, larch, oak, ash, and beech, among others. The output of the leading minerals is given in the table below.

RUSSIA: MINERAL PRODUCTION; 1926 AND 1931 ⁴

	1926	1931
Coal (metric tons)	25,400,000	57,600,000
Petroleum (barrels)	61,140,000	169,700,000
Iron ore (metric tons)	3,300,000	10,600,000
Manganese ore	1,180,000	876,000
Copper (smelter metric tons)	10,600	48,000

Of these materials manganese ore and the products of petroleum are of chief interest to the foreign trader. In fact, the latter are the largest single exports of the country.

With respect to agricultural products, domestic consumption absorbs by far the larger part of what the fields produce; but in most cases, there is a surplus for export. This is notably the case with wheat. Foreign shipments in 1930-1931 were 111,700,000 bushels. The export

⁴ *Foreign Commerce Yearbook* (U. S. Department of Commerce), 1933, p. 131.

of other cereals is of less importance. All in all, the varied output of the farms supply upwards of 30 per cent to Russia's export commerce. In export trade furs also have an important place, and this applies also to lumber in various forms. Except for cottons, manufactured goods play a very small part in the export trade. Russia is a rather large importer of certain raw materials, of which cotton and wool are the most important, but manufactures, including various types of machinery, are the chief class of goods brought in from other countries.

The total foreign trade, which was \$929,200,000 in 1929 and \$650,000,000 in 1932, seems to be unusually small in view of the potential productive capacity of the country. But Russia labors under certain disadvantages as compared with the industrialized nations. Her present opportunities are largely in the field of certain raw materials with which the world is now greatly oversupplied. Moreover, this is connected with another problem, namely, the inability to find a means of payment for types of manufactured goods which she is willing to purchase. Until this country can discover large quantities of exportable commodities which other nations are willing to receive, the extension of credits as an aid to Russian purchases will probably turn out to be an unsuccessful venture.

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CHAPTER XII

JAPAN

The foreign commerce of Asia, including both exports and imports, in both 1929 and 1932 was about 14 per cent of the total for the world, and Japan's share in the Asiatic total was about 20 per cent. The movement towards industrialization in the United States, and in some of the countries of western Europe, was almost a century old before Japan was opened to the trade of the world. Those characteristics of the industrial system, which we call modern, had not made an appearance in this country before 1860, nor had they exerted any considerable influence before 1880. What Japan has achieved in production, in rise in importance as a world commercial power, and in the various exploits of international finance which usually accompany industrialization, have been the products of the years since that date.

Why Japan and Not China?

Leadership in a large part of Asia ought to have been the lot of the Chinese. But they failed in their mission. At present, the obvious reason is in the political discord which infests the country and in the inability of the leaders to organize for any useful purpose. Back of this lie other causes, the lineage of some of which may be traced back to the time of Confucius.

At the dawn of the modern era, China possessed some of the elements necessary for economic progress. She had potential markets which European merchants, and subsequently those of the United States, had coveted for years. Essential resources were abundant enough for considerable economic growth, and with the development of wealth, which is the natural outcome of successful manufacturing and trading, other materials which the country needed might have been easily obtained. But economic development, at least in the modern sense, did not materialize. China's time to exchange the old order for the new had not come. The incentive to make the transition came first to Japan, and leadership in economic affairs and even in political matters passed into her hands.

Background of Japanese Development

While changes in the affairs of nations sometimes come with remarkable suddenness, as did the Industrial Revolution in England, the elements which are effective in producing a transformation are often so effectively concealed in current life as to escape attention. Long before Commodore Perry in 1854, and in the same year, Admiral Sterling in behalf of Great Britain, negotiated commercial treaties with Japan, a substantial basis had been laid for the development of industry in its modern form. The people of the country had acquired a high degree of proficiency in certain of the industrial arts. This was the case in the making of pottery, lacquer ware, metal work, cloisonné, wood and ivory carving, and the production of paper, textile fabrics, and embroidery. Industrial habits were already developed, and it required no great effort for workers to adjust themselves to factory methods.

Moreover, however effective the exclusion of foreign traders might have been, this policy did not prevent the gradual growth of home exchanges. Domestic industry of whatever kind involved traffic of some description; the inevitable consequence was the appearance of a money economy, the development of wealth among the trading classes, the growth of power in their hands, and the breaking down of the feudal system which in Japan, as in Europe, had held industry and social life in its grip for a number of centuries.

These changes had a political aspect. Dynasties come and dynasties go, and this was the order in Japan, as in all human history. Whatever the merits or defects of the Tokugawa shogunate, which had guided the affairs of Japan for over two hundred years, its policies failed to meet changing conditions. With the demise of this régime, and with the restoration of the Emperor as the active ruler in 1868, a unified government became possible. Upon that event turned much of the subsequent economic history.

For many years preceding this change, information concerning developments in the western world had come to Japan. "Dutch traders at Nagasaki brought news of developments in other lands, and as early as 1700, a book on conditions abroad was published in Japanese. In due course, Dutch came to be studied as a language and through Dutch books much of the scientific knowledge of the Western World was introduced. As early as 1800, plans for establishing factories were discussed; and in the decade of the fifties a progressive *daimyo*, living near Nagasaki, established plants which cast guns and produced many ar-

ticles such as glass, ceramics, sulphuric acid, distilled spirits, sugar, agricultural implements, ship-building machinery, and oil-extracting machines. Electric machines were also experimented with, and a refinery was established where drugs, sugar, and other products were analyzed, and gold and silver were assayed.”¹ With a change of only a few words this paragraph could have described the industry of many localities in the United States as it existed in 1800, and in some places as late as 1840. In short, not only the spirit which inspired the later development of industrialism, but a good deal of the technique was already in existence in Japan before the so-called “Hermit Empire” was unsealed.

Resources

In the prior years of its history, until after 1860, the parts of this empire were almost completely self-sustaining. While foreign commerce was not entirely excluded, since the Dutch and Chinese enjoyed privileges of trading in certain areas, the quantities of goods which they could bring in contributed only insignificant amounts to general consumption. The coming of factory methods made necessary not only the fuller development of resources which Japan possessed within its own borders, but, very early in the transformation, it caused the country to feel the need for materials which she could not produce at home. In the earlier stages of this growth, buying abroad involved selling abroad, because the imported materials had to be paid for.

Domestic resources were adequate for the type of existence which characterized the Japanese before the coming of the new era. Farming then, as now, was the main occupation; and by diligent labor the fields could be made to supply all the necessities. To supply some 27,000,000 people, the number in 1846, from the limited area was a large order, but the feat was accomplished, although vast numbers lived constantly under the threat of starvation and always in the throes of poverty. This simple economy did not require diversified materials either as sources of foodstuffs or as substances from which implements of production could be fashioned. But a very different situation came into existence with the development of the power industries.

Coal reserves have been unequally distributed over the earth. Upwards of two-thirds of the known supply is in the western hemisphere. Asia, whose needs under extensive industrialization would far exceed

¹ Moulton, H. G. and Ko, J., *Japan* (the Brookings Institution, Washington, 1931), p. 7.

those of the United States has been poorly endowed, and Japan has been one of the least favored of the Asiatic areas. The reserves of Japan and Chosen are possibly 8,000,000,000 metric tons. At present Japan produces from 30,000,000 to 35,000,000 tons a year. It is fair to assume that production will increase with further industrial expansion; in that event, the domestic reserves may have a rather brief future, as industrial eras go. The sources are widely distributed and, in a number of cases, are not readily accessible except at high costs. Japan exports small quantities of this mineral (2,011,000 tons in 1929 and 1,366,000 in 1932), but the imports exceed the exports (3,203,000 tons and 2,673,000 in the years just named).

The other mineral power resource, petroleum, is even less abundant than coal. Much effort has been expended during the last decade in the hope of discovering this material either in Japan and her possession, or on the continent, but without marked success. The official figures since 1921 have never reported production in excess of 2,000,000 barrels annually. Thus the imports of mineral oils are among the large items in Japanese trade.

This statement applies, also, to most of the metals. Copper is the only element in this class of which the domestic supply approaches the needs of the home industries. Measured in terms of mine production, Japan ranked fifth among the nations in 1932, but her output was less than 10 per cent of the world total. This country is usually an importer of this metal, but as a rule the quantities are small—10,800,000 pounds in 1929 and 652,000 pounds in 1932. Occasionally, when price conditions were favorable, copper becomes an item of trade, appearing both as import and export. After all, Japan's dependence on the outside world for this important metal is of very little consequence compared with that of some other industrialized nations. France often imports forty times as much and Germany from seventy to one hundred times as much.²

The position of Japan is less favorable with respect to lead and zinc. Although both metals occur, the resources are lean compared with other producing sections of the world, and they cannot be worked at a profit unless prices are high. Both metals are imported. With lead the amount was 133,400,000 pounds in 1929 and 122,000,000 in 1932; and with zinc 59,700,000 and 46,000,000 pounds in the same years.

In view of her ambitions for industrial leadership in the Far East, the most notable mineral deficiency of Japan is iron ore. However

² Including brass and bronze.

complicated or simple, or however large or small, the manufacture of iron is an absolute essential to industry as we conceive it to-day. Nor is this all; it enters into thousands of forms of final consumption; even the user is not aware of the presence of iron, or of the part that it plays in making his life more convenient and comfortable. The extent to which this metal can be employed when resources are abundant is illustrated by its production in the United States where the mine output has sometimes exceeded 60,000,000 tons a year, and was once more than 75,000,000 tons. Iron is a vanishing resource, but there is much less to disappear in some areas of the world than in others. Unfortunately, Japan is one of these areas.

The iron ore reserves of Japan and Chosen, at least those which can be worked profitably under present conditions, are estimated at about 60,000,000 tons, of which about 56,000,000 tons are in Japan proper. It is evident from this that if the Japanese iron and steel industry were supplied from domestic resources alone, expansion would be severely restricted. Import is necessary. Besides Chosen, supplies are brought in from China, the Straits Settlements and Manchuria. From the point of view of quantity, the reserves of Manchuria hold out the greatest hope for the future. According to some estimates, Manchuria contains some 300,000,000 tons of iron, measured in metallic content. But, at that, much of this material is of poor quality and must await improvements in metallurgical processes before it can be developed successfully. Because of her deficiencies, Japan is forced to import large quantities of semi-finished iron in the form of pig, bars, plates, sheets and rods, among others.

With respect to other metals, the meagerness of her resources is not so significant as with iron. The rarer metals exist in only a few places of the world, and practically all industrialized nations are importers. The significance of such materials lies chiefly in their use in the manufacture of certain alloys of steel.

Textile Fibers

With respect to these materials, Japan has sufficient domestic supplies of only one, namely, silk. But in this case the quantity is so abundant that she not only supplies her own industries but exports large amounts. Raw silk is not only the most important export, but it usually accounts for from 25 to 30 per cent of the total foreign shipments. Of this commodity the United States is the largest foreign consumer. As a rule, raw silk amounts in value to more than half the

exports from Japan to this country. In 1929 it was more than 80 per cent. On the other hand, the United States exchanges the compliment by shipping to Japan another very necessary textile fiber, namely, cotton, which in 1929 and 1932 amounted to about 42 per cent and 62 per cent of the total imports from the United States. In fact, the sudden development of Japanese foreign trade in cotton textiles, beginning about 1932, made her the most important consumer of American cotton. Whether this condition will last depends on various factors in international competition, the position of the United Kingdom being one of the important considerations. In view of the relation of the United States and Japan in the trade in raw cotton and silk it is easy to understand why the United States occupies the first place in Japanese foreign trade, whether in imports or exports. In recent years shipments to the United States have usually amounted to more than 30 per cent of Japanese exports. In 1929 they were 42.5 per cent. On the other hand, imports from the United States are from 25 to 35 per cent of her total.

Varying quantities of all the other fibers are imported. Japan can scarcely be considered a producer of livestock. In 1932 the farms contained only 1,500,000 cattle, 742,000 swine, 24,000 sheep, and 1,500,000 horses. Animals supply a number of raw materials for manufacture, of which wool, hides, and meat products are the most important. The Japanese as a nation are not meat eaters, and the limited number of livestock is of little or no significance from the point of view of food supply. But it does indicate the inability of the country to supply itself with two important raw stuffs, namely, wool and hides. Japan imports large quantities of wool, mainly from Australia and New Zealand. The imports of hides and leather are considerable. This is the case also with hemp and jute.

Foodstuffs

Considering the size of her population, about 64,400,000 for Japan proper in 1930, the dependence on external sources for food supply is relatively small. At home, rice is the staple crop, and although the fields are pushed to the limit to produce their precious supply, they fail to cover the full requirements. The country rarely produces more than 30,000,000 bushels of wheat and must import nearly as much to meet its full requirements. The soy bean is an important item in Japanese diet, but, in spite of large home production, varying supplies must be imported. Sugar is also brought in from other countries, although the islands produce considerable quantities.

Sea Foods

The fisheries are probably the most prolific resource of Japan, although in recent years some of these have been showing signs of diminishing productivity. But at present these sources still supply vast quantities of sea foods for home consumption, and sizable quantities for export. The fishing grounds include not only the waters surrounding the islands, but those off the east coast of Asia. The annual catch ranges from 3,000,000 to 4,000,000 tons annually, to say nothing of an added 1,000,000 tons from Chosen and Karafuto. This is from three to four times as much as is credited to the United Kingdom, which also finds its fisheries one of the most satisfactory of its resources. The catch of the warmer waters along the coast includes sardines, mackerel, tunny, oysters, and various kinds of shell-fish; that of the colder currents, salmon, herring, trout, and cod, to say nothing of sea-otters and fur seals.

Some of this enterprise has entered the capitalistic stage, making use of power-driven boats, large scale organization, floating canneries and other paraphernalia of large scale production. In 1929 Japan exported 45,000,000 pounds of fresh and dried fish and 25,000,000 pounds of canned crabs. As with all other enterprises, this business suffered a material decline after that date.

Timber Products

Hitherto the forest resources have nearly supplied domestic needs, except for certain types of timber which were not available locally. But industrial expansion, bringing in its train both more diversified and intense demands, is making its impress on the original forest supply. The annual cut now exceeds the annual restoration. More than half the stand is conifers. In domestic use, timber is consumed mainly for fire wood, building construction, shipping crates, and for various railway uses. The rise of the paper industry, with its demands for pulpwood, and the more recent development of the manufacture of rayon, have thrown an added burden upon the forests. In 1932 the imports of cedar alone amounted to 664,000,000 board feet. The colonies supply a portion of the needs for certain kinds of timber, but considerable quantities of Douglas fir, hemlock, and cedar are obtained from the west coast of the United States and from Canada. In terms of value, imports from the United States in 1929 amounted to \$31,000,000 which was about 10 per cent of the value of all shipments from this country to Japan.

Trade in Manufactured Goods

As might be inferred from what we have said above, Japan has only small quantities of raw materials for export, except silk. Tea was once a relatively large item in the export list, but it is now of little importance. Foreign shipments are made up of a great variety of articles many of which have been impressed by peculiarities of Japanese art and skill. But the textiles now dominate the list.

Capitalistic methods are of very recent origin in Japanese industry. Possibly some unusual urge was needed to accelerate the shift from hand production to the use of power with its accompaniment, the machine. At any event, the Chino-Japanese war of 1894-1895, the later Russo-Japanese war (1904-1905), but more particularly the Great War, which left a partial vacuum of commodities in the Far-Eastern markets, due to the inability of European manufacturers to supply their usual customers, gave the Japanese their opportunity. No doubt, time was required to accumulate the necessary capital for expansion, to train workers, and to build up an organization which all this implies; but European and American methods showed how this might be done. The country was ready for its opportunity in 1914 when the Great War came, and expansion went on at a rapid pace. Since that time development has been almost continuous, and, in some cases, very rapid.

As late as 1914 the Japanese cotton industry reported only 2,750,000 spindles; the number in 1932 was 7,790,000. This was a greater increase than in any other country. In fact, the number of spindles in the United Kingdom declined over this period, and Britain's portion of the world total diminished from 38.5 per cent to 32.2 per cent. A few other countries, such as India, Belgium, Italy, and China made a gain, but not as great as that of Japan. In this connection, also, the Japanese consumption of raw cotton almost doubled over this period; her per cent of consumption in the world total increased from 10.9 per cent to 12.0 per cent in the period from 1926 to 1932.

The growth in the manufacture of woollens has been partly a repetition of what has taken place with the cottons, except that it is with the latter that Japanese competition has been more keenly felt in the international markets. From 1909 to 1913 Japan imported, as an annual average, only 17,900,000 pounds of wool, with little or no exports. In 1932 the incoming shipment were 205,100,000 pounds, again with negligible exports. While the silk industry has expanded after the

fashion of the other textiles, the gain has not been as great as with cottons and woollens.

Japan became a manufacturer of rayon rather late, compared with some European countries. A beginning had scarcely been made in this industry in 1912. During the next ten or fifteen years it was passing through its experimental stages and finally emerged in the decade from 1920 to 1930 as a successful enterprise. In 1932 some 46,700,000 pounds were produced which was about 8 per cent of the world total.³ The textiles now employ the greatest number of operatives and make use of the largest amount of power. A summary of the various industries is given in the table.

HORSE-POWER AND OPERATIVES IN CERTAIN JAPANESE INDUSTRIES; 1931 ⁴

	NUMBER OF	HORSE-POWER	
	OPERATIVES	PRIME MOVERS	ELECTRIC MOTORS
Textile industries	898,792	888,043	805,314
Machinery and vehicles	158,351	528,222	805,477
Foodstuffs	133,516	182,654	152,166
Chemicals, fertilizers, etc. . .	122,461	660,822	610,987
Metals and metal products . .	84,269	307,766	292,069
Clay products	56,731	387,569	300,279
Lumber and wood products .	56,658	167,577	108,301
Printing and binding	51,367	29,889	29,726
Paper	24,328	228,974	198,483
Miscellaneous manufactures .	89,939	49,765	47,983
Total	1,676,412	3,431,281	3,350,785

These industries provide the basis for the leading manufactured exports. Textiles and clothing outrank all others. As a rule, they amount to from 25 to 30 per cent of the total. Among the other important exports are paper and its manufactures, glassware, various metal products, drugs and chemicals, lamps and parts, toys, and manufactures of wood.

Since 1930 Japanese cottons have made marked gains in external markets, but more notably in those of China and India. Compared with other leading exporters, Japan has the advantage of a plentiful supply of cheap but skilled labor, and her technical efficiency probably ranks along with that of her competitors. Currency depreciation may have

³ United States 30%; Italy 16%; Germany 11.5%; United Kingdom 11.5%; France 8%.

⁴ *Foreign Commerce Yearbook* (U. S. Department of Commerce, 1933), p. 266.

contributed something, at least temporarily, to the rising tide of Japanese exports. Whether or not these gains can be held is a matter for the future to decide.

Industrial and Commercial Policy

One of the features of recent Japanese development has been a vigorous governmental policy directed to the development of home industries and to the expansion of foreign trade. These measures include the development of the merchant marine, colonial expansion, government aid in the financing of industries, and the encouragement of private investment both in the colonies and elsewhere.

In 1931 over 33,000 persons were engaged in ship-building. Since 1895 the development of the merchant marine has kept pace with the expansion of home industries. At this date Japan occupied only a minor position among the nations, with only 280,000 tons. In 1931 her tonnage exceeded that of any other country, except the United Kingdom and the United States, with about 4,276,000 tons. This signifies that Japan largely carries her own freight and has become an important factor in international shipping.

The colonial empire of Japan is a recent development. Expansion of this description was in line with the policy of other great nations which have sought large external markets for their surplus products and control over sources of raw materials. With Japan there is the added reason of a need for new lands into which the people of the overcrowded islands may expand. It is by no means certain that she has met with much success in the last named purpose, because the new possessions are also crowded. Chosen has a population of 240 per square mile, and Taiwan 330.

To what extent these dominions will prove valuable markets for the home country remains to be seen. The trade of Chosen is the most important. Imports in 1931 were \$133,500,000 and exports \$129,200,000. In that year over 85 per cent of the total trade was with Japan. The exports included fish, sugar, raw silk, lumber, pig iron, fertilizers, soy beans, and rice, the last named commodity contributing more than half the total value. The most important imports were cotton piece-goods, coal, petroleum products, and machinery.

The trade of Taiwan (Formosa) is mainly with Japan. Sugar dominates the exports, amounting in 1931 to \$60,600,000 out of a total of \$109,000,000. The balance was made up mainly of shipments of rice (\$20,200,000), fish, bananas, pineapples (canned), tea, coal and cam-

phor. Imports amounted to \$71,800,000 consisting mainly of manufactured goods. Japan's trade with the other possessions is of little importance.

The possessions cover a very small area compared with those of France and Britain. Excluding Pescadores, Kwantung (held under a ninety-nine year lease), and the mandated territory in the South Seas, the total is about 113,000 square miles. Chosen (Korea) is the largest, and from the point of view of future possibilities, the most important. It covers 85,200 square miles, with a population of 21,000,000. Its resources are mainly agricultural, but the region may yield considerable quantities of coal and iron when the proper conditions for development are supplied. The size of Taiwan is about 13,800 square miles, and the population 4,500,000. The exports named above suggest the principal occupations of the people. Karafuto covers 13,900 square miles with a population of 295,100.

All in all, the territorial acquisitions have added large numbers to an already overcrowded empire, they have contributed some diversity to the resources under Imperial control, and, at least in the case of Chosen and Taiwan, they have added materially to the export market of Japan, because this country now enjoys the lion's share of the trade. But the possessions have contributed little or nothing to the greater essentials of economic expansion, namely, control over adequate supplies of minerals. Perhaps this is a little too much to expect if colonial acquisition is to be confined to the Asiatic areas for, taking the situation as a whole, the eastern world seems to have been largely forgotten when natural forces were distributing those materials. With few exceptions, such minerals as the Far East possesses are of poorer quality than those existing in the western world, and they do not exist in as large quantities. The establishment of a new sphere of interest in Manchukuo, and the more active development of this territory since 1930, may overcome some of these difficulties, but there are natural limitations to great expansion.

The development of colonies is a contribution which government makes to national development, and, as a rule, such activity is for some economic benefit. But with Japan the government has gone much further than colonial acquisition in its efforts to stimulate industrial growth. Many of the means suggest measures adopted in our own colonies at a time when the founding of new enterprises was greatly desired, and when private capital was either unequal to the task or was unwilling to take the risks. Possibly one reason behind these plans was

the desire for speed in development. In the case of Japan, the country entered the sphere of industrialization rather late. Other great nations had behind them the momentum of almost a century of growth. Without the powerful aid of government, development might have been slow; hence the resources of the state were used as a sort of "primer."

Thus, in Japan, the government has often taken the lead, acting sometimes as promoter, sometimes as capitalist and banker, sometimes even as instructor, for upon a number of occasions model enterprises have been developed under the ægis of the State as a kind of demonstration of proper methods of conducting businesses. And at all times, at least since the nation has acquired complete control over its foreign affairs, it has acted as a guardian of national economic interests through the agency of protective tariffs, or, in the case of internal measures, by the grant of bounties, subsidies, or favors of some kind designed to put home industries in a more favorable competitive position with reference to foreign trade. After all, there is nothing new in these measures. They have been employed at one time or another by other nations. Japan has merely picked the elements of a plan which she thought were desirable, and adapted them to her conditions. And it might be added that here, as elsewhere, policy seems to be transient.

More concretely, the hand of government is found in the conduct, in whole or in part, of such enterprises as postal service, telephones, and telegraphs and in the building and operation of railroads. In 1931, about 9,000 miles of the total of 13,360 in Japan were government lines. Then there are certain government monopolies such as salt, tobacco, and camphor. The state has undertaken a certain amount of industrial pioneering. Some early ship-building and operation was conducted by the government. Similar activities were undertaken in the manufacture of iron and steel. In some cases the government has withdrawn when the industry could proceed in private hands.

In addition, large amounts of government credit have been employed in promoting enterprises both at home and in the colonies—the state acting either as underwriter, or as a participant in the business. In some instances also the state has come to the aid of industries in distress, as with the Silk Stabilization and Indemnification Act of 1930, designed to bring assistance to silk producers because of the decline in the American demand and the precipitous decline of prices—an action which contains a suggestion of certain farm relief measures in the United States.

These are only illustrations. The government has stood ready to use

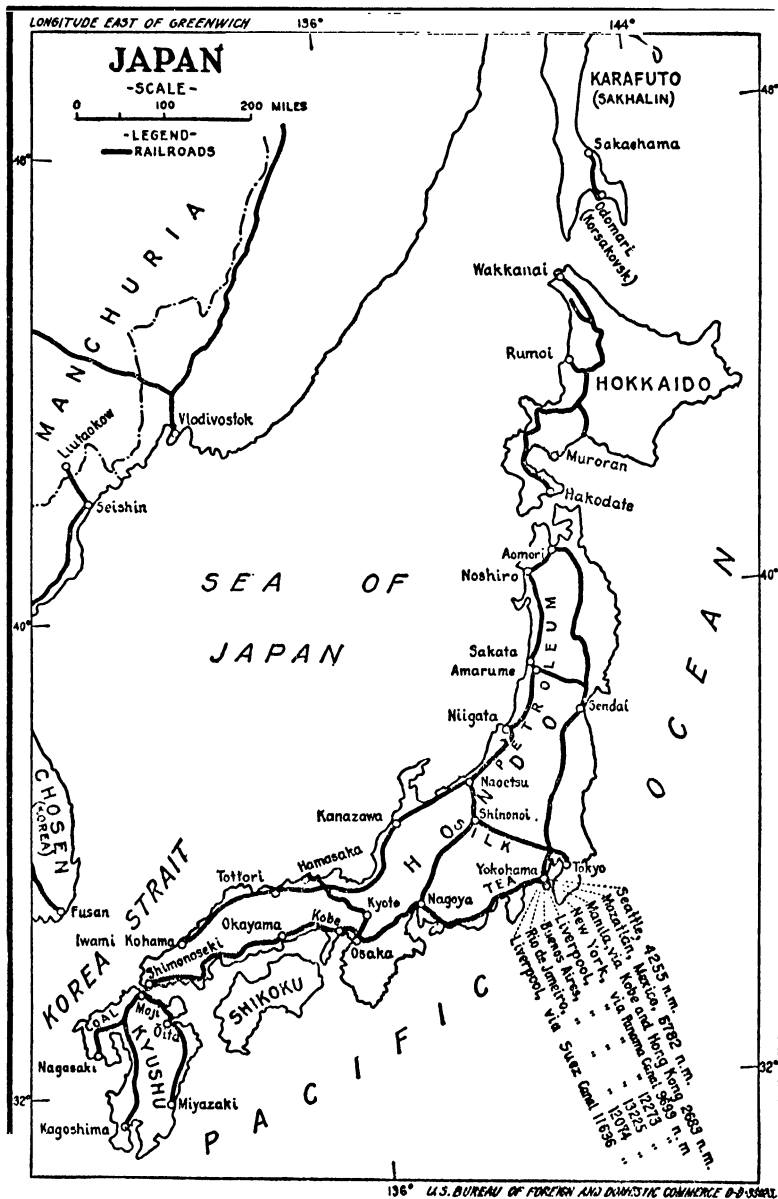


FIG. 11. JAPAN—SHOWING RAILROADS

its credit either to assist desirable home industries, or to encourage the effort of private capitalists both at home and abroad. As measures of control or assistance should be added subsidies to shipping companies, preferential rates on railroads for goods destined for export, and the establishment under government authority of standards of quality to which exporters must conform in order to defend the name of the product and to protect the good will of exporting houses. In recent years, the government has favored plans for the "rationalization" of industry, not for the purpose of restricting output, but for the better coördination of production and for an aggressive development of foreign markets. Possibly the present plans for the construction of railways in Manchukuo, and for the expending of large sums in the territory for the development of roads, factories, power plants, and for the opening of mines, are in line with the same policy.

Tariff Policy

Because of the existence of old treaties, some of which dated back almost to the time of Commodore Perry, Japan was not able to get full control of her commercial arrangements until about 1900. Thereafter, the government had a free hand not only in the making of commercial treaties, but in the development of a protective system. In Japan, as elsewhere, duties have been changed from time to time to meet supposed, or actual, conditions of trade. But the idea of protection is inherent in the policy, although in some instances, added revenue is the aim. Desirable raw materials are sometimes admitted free or burdened only with a small duty; farming interests are protected; and considerable rates are levied on imports which compete with established industries. As a rule, colonial products are admitted to the home country free of duty; but, on the other hand, the protection against foreign competition, which is enjoyed by the home country, is also extended to the dominions.

Growth of Foreign Commerce

Except for the large trade with the United States, which as we have seen, is involved to a large extent with the exchange of silk and cotton, the foreign trade of Japan moves largely among the countries of Asia and Oceania. China is usually the largest Asiatic market for Japanese exports and British India ranks next. But large amounts of goods are exported to Netherland India, Hong Kong, Kwantung, and Australia. Exports to the Philippine Islands are only a small proportion of

the total (\$14,000,000 in 1929 and \$6,200,000 in 1932). Likewise, only a small proportion of Japanese exports are destined for European countries. Taking 1929 as an example, the United Kingdom received only 3.0 per cent of the total exports of Japan, France 2.1 per cent, Germany .6 per cent, and all the others less than one per cent. Japan enjoys trade with Latin America, but it is distributed in rather small amounts among the various countries. Egypt is the best African customer. As a rule the imports of Japan from European countries exceed her exports to this destination.

In 1900 the foreign trade of Japan was less than that of some of the smaller nations of Europe. This was the case with Belgium and Netherlands. As an annual average for the five-year period ending with 1905, the total foreign trade of Japan was less than one-eighth that of Germany, about one-seventh that of France, and about one-thirteenth that of the United Kingdom. But thirty years of development have produced a different result. During the years from 1925 to 1930, Japanese foreign trade was a little less than one-third that of Germany, somewhat less than one-half that of France, and about one-fifth that of the United Kingdom. Progress in the development of her overseas commerce was rather slow until about 1914; thereafter, it expanded with great rapidity. This growth by five-year periods is given in the table below.

FOREIGN TRADE OF JAPAN BY FIVE-YEAR PERIODS; 1900 TO 1930⁵
(YEARLY AVERAGE)

	GENERAL IMPORTS	GENERAL EXPORTS	TOTAL
1901-1905	\$168,057,000	\$142,101,000	\$ 310,158,000
1906-1910	218,773,000	208,676,000	427,449,000
1911-1915	295,375,000	286,855,000	582,230,000
1916-1920	810,394,000	888,657,000	1,699,051,000
1921-1925	942,348,000	756,209,000	1,698,557,000
1926-1930	991,600,000	907,938,000	1,899,538,000

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⁵ *Foreign Commerce Yearbook*, 1933, p. 267.

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CHAPTER XIII

ASIA AND OCEANIA

If mere numbers constituted a market the continent of Asia would be the largest trading area in the world. It contains over half the population of the globe, and this says nothing of the great numbers that inhabit the islands to the east and south. But in spite of the vast hordes of human creatures whose wants must be cared for in some manner, Asia ranks third among the continents in trading importance, and if we subtract the commerce of India and China, it would be of less significance than Oceania.

Causes Involved in Modern Development

For one reason or another the impulses which led to the founding of modern industry and commerce originated chiefly in a few countries in western Europe and in the United States. A small amount of trade has flowed between the East and West since ancient times. It was augmented greatly during the days of the Oriental traders, and increased still more with the opening of the sea routes to the Far East. But, in spite of these contacts, this commerce produced little or no effect on the economic institutions of those distant countries until after 1850. This does not mean that the Oriental trade did not affect appreciably the economic activities in the West. It was the occasion for great struggles among the nations for both economic and political domination. But these forces exerted very little influence in the other direction, that is to say, from East to West. The progress of economic change, if one wants to call it progress, moved from West to East.

A number of factors were involved. Whether mercantilism as a system was passing away or not, at least certain of the mercantilistic ideas persisted, notably the desire to build up home manufactures, and the need of finding markets for surpluses and new sources of raw materials, to satisfy the requirements of home industry and commerce. In accordance with these ideas the western nations of Europe, and subsequently the United States, pushed their trade vigorously. They created markets, improved the mechanical facilities for trade, notably

in the development of a better type of merchant marine, and built up gradually a commercial and financial organization in the Far East. Steam navigation, first inaugurated between England and India in 1825, marked the beginning of a new era in trade with this distant world. This paved the way for more speedy communication, and for vessels with large carrying capacity. It lowered the cost of all forms of transportation; but it was of particular advantage in the conveyance of low-valued bulky freight which formed a considerable part of the return cargoes to Europe and the United States.

Meanwhile, commerce began to feel the advantage of another rapid means of communication. Within a quarter of a century after the introduction of the telegraph, the same principle had begun to be applied to the transmission of intelligence by submarine cable. One of the first of these was a short line constructed in 1852 from Dover to Ostend. After many trials, a trans-Atlantic cable was finally put into working condition in 1866. Meanwhile, a number of short lines were laid in the waters about Scandinavia, in the Mediterranean, and others were laid in the Atlantic to connect the British Islands with various European countries and with the Americas. This was only a beginning. In 1860 there were scarcely 1,000 miles of cable in operation. In 1927 there were 105,800 nautical miles of this type of communication. Aided by domestic and foreign capital, some countries of the Far East began to construct local telegraph and telephone lines. These facilities not only increased the rapidity of turnover of capital but operated by more devious methods to speed the development of new economic and social ideas. Thereby, whether for better or worse, the East became more receptive to the economic ideas of the West.

Political Institutions

What we have said hitherto refers chiefly to economic matters. In one way or another changing political conditions have affected the development of commerce and industry. In 1880 democratic ideas had hardly left an impress anywhere in the Asiatic world. But in most of this area to-day, something which goes under the name of democracy has been established. This probably means the disruption of traditional forms of social existence, and radical changes in religions and philosophies, which tended to hold people to a fixed channel of life. Inevitably, the appearance of democracy brings in its train certain economic ideals, such as the spread of opportunities among the masses of the people, higher standards of living, and a greater share for all

in the fruits of industrial progress. It means, also, the discarding of old forms of industry and the introduction of improved methods of work by means of which the output of human labor may be enlarged and the compensation for work increased. Inevitably, also, there results a demand for widespread education, for relief to the underprivileged classes, and for civic improvements. Eventually, such improvements can be supported only by income from industry, and thus the new rulers find it necessary to encourage the expansion of manufacture and commerce.

It takes years for people who are not familiar with industrial revolution to understand the intricate workings of the factory system, and an even longer time to put such an order into operation. It is a real puzzle "for an occidental to understand how it has happened that the vast mineral resources of some of these eastern lands have remained hitherto almost untouched. There are, however, several factors which furnish the explanation. Besides the difficulty of actually extracting the minerals from the earth there are the problems of carrying on the processes necessary to transform the crude minerals into usable metal products. Furthermore, there are the questions of capital investment, of management, of labor, and of transportation. When all these items are considered it does not appear so strange that little mining has been conducted in any eastern country prior to the present generation."¹

Nor is this all. The conduct of business is not only a matter of technique and of internal management, but of the legal form in which the enterprise has been cast. In the western world it has been found necessary for investors to pool their capital, sometimes in the form of partnerships, but more often, where the business is on a large scale, as corporations. This latter idea is simple to us because we have grown up with it; but it involves a kind of coöperation to which people must be trained and risks which people of more conservative temperament are not willing to take. Herein, perhaps, is a part of the explanation for the absence of the corporate idea in most of the Far-Eastern world.

Some of the difficulties in introducing this form of business are suggested in the following statements: "The ideas of corporate business, as taken from the West, cannot succeed in China without an accompanying sense of the responsibility of trusteeship. Potentially the Chinese possess the qualities necessary to the success of corporate enterprise, but before corporate business can be developed in a large way among the Chinese mercantile communities, it will be necessary to in-

¹ G. M. Dutcher, *The Political Awakening of the East* (The Abingdon Press, New York, 1925), p. 316.

stitute a body of laws and courts competent to build a solid foundation for the new order.”² Anyone who has studied the advantages of the corporate form in relation to business methods in progressive countries understands the magnitude of the disadvantages mentioned in this quotation. For one thing, the corporation makes possible the assembling of the savings of people and the direction of these savings into industrial uses. Moreover, the corporation enables a large number of people who invest funds in enterprises to function as a unit. Under this form ten thousand people can own and operate a business as easily as five individuals, and in some cases much more effectively.³ Thus far, it has been said, “Japan is the only one of the Oriental nations which has yet learned the lesson, to any considerable degree, of the conduct of business enterprises on the joint-stock corporation basis.”⁴

In all the Far-Eastern countries, there are probably large sums of capital hoarded in various ways, as in western Europe before the founding of modern banks, which would be of great value in the development of industries. The welfare of the eastern peoples “demands that they learn as speedily as possible to get their talents out of the napkins and into investments in productive enterprises of their own.”⁵ This, of course, only states the problem but does not give the answer, which involves changes in the habits of thought established through the centuries. In the absence of such a change, foreign capital and enterprise have become the chief reliance in modernizing these countries industrially.

Character of the Resources

The great land division of Asia exists under six or more political dominations. The Asiatic portion of the Russian empire stretches from the Urals to the Pacific. South is the republic of China. India lies still further south with its great peninsula pushing into the Indian Ocean. French Indo-China and Siam are in the southeastern tip of Asia. Persia, Arabia, and Turkey are in the western portion of the continent, and this says nothing of the outlying islands, Japan, the Philippines, Ceylon, and many others to the south and southeast.

Naturally, a continent whose southern tip rests on the Equator and whose northern borders stretch into the Arctic Circle, contains a great diversity of climatic conditions, a situation which is still further varied

² “China,” *Trade Promotion Series*, No. 38 (U. S. Department of Commerce), p. 393.

³ Lippincott, *Economic Resources and Industries of the World*, p. 32.

⁴ Dutcher, *op. cit.*, p. 314.

⁵ *Ibid.*, p. 314.

by the vertical climates in some of the high mountain ranges. Many kinds of minerals are in the earth, and fields and forests yield a great variety of goods. One of the greatest timbered regions in the world stretches across Siberia, in an area estimated at 585,000,000 acres. But it will be many years before these rich resources can be tapped to any considerable extent. At present, commercial development of timber is feasible only in western Siberia and in the Russian Far East. Timber from the former area may be sent down the Ob and the Yenisei rivers, and from the latter, down the Amur. Naturally, in such a large area, the character of the forest growth differs from region to region. But, in general, the most important trees are the conifers, including pine, larch, Siberian fir, spruce and cedar. The forests of the west contain, also, birch and aspen, and those of other regions, the velvet tree, ash, maple and elm.

India is said to contain over five thousand woody species, the majority of which are shrubs and climbers. Among the commercial varieties are the teak, deodar or Himalayan cedar, redwood, ironwood and satinwood. The forests also produce a great variety of gums, dye, resins, drugs, fibers, and tanning materials. In China, great areas were denuded of their forests centuries ago to make room for agriculture. But local supplies of considerable importance are found scattered throughout the country. These include red and white pine, oak, walnut, ash, and chestnut. The bamboo is a useful tree in many parts of the country, in Japan, India, and the East Indies particularly. It is a general utility timber, used for many kinds of construction, and in the manufacture of furniture, agricultural implements, fence timber and musical instruments, to mention only a few of its uses.

General Conditions

The twenty million or more square miles which make up this area are divided among a number of political powers; but here, as elsewhere, political control has no relation to geographic divisions. The commerce of the nations depends largely upon resources that nature has distributed within each country, except that occasionally national, or racial, habits and traditions have led to the production of certain commodities that are peculiar to methods of thought, or to traditional skill. The rug-making areas of the Plateau of Iran are an illustration of this type of commodity.

Population is very unequally distributed over the continent. Probably three-fourths of the people live in India and China. These two

countries contain over 800,000,000 inhabitants. A study of a population map would indicate that by far the greatest portion of Asia is sparsely inhabited, despite the large numbers in the two countries just mentioned. The existence of high mountain areas, of deserts, of steppes, and of forests, prohibit any great concentration of numbers in such regions, at least under existing conditions of development. In Arabia, for example, the density of population is only seven per square mile, in Persia it is about sixteen, in Afghanistan it is about twenty-eight, and over vast stretches in Siberia it is probably less than the smallest figure named above. On the other hand, in the British provinces in India, the density of population is about 245 per square mile, and in China proper about 243. In portions of India and China, the density of numbers is as great as over 800 to the square mile.

In much of this continental area the mineral resources have never been developed, even in a primitive way. Even to-day no one has an adequate knowledge of what this region contains. For most people throughout the continent, agriculture is the principal occupation; their simple wants are supplied by a very humble type of hand industry. Many millions of people have nothing to sell and, as a result, they lack the means of purchase.

The whole continent is inadequately provided with means of communication. Railroads are now the chief means of stimulating land commerce, but all Asia contains less than 65,000 miles of rail; of this about 42,000 miles are in India and some 9,400 miles in China. Obviously, these countries, with their millions of people, do not possess a railway system that could meet the needs of highly developed industries. Although Asia possesses some of the great rivers of the world and great numbers of people are concentrated along their borders, the streams are not an adequate substitute for transportation by rail.

Moreover, commercial facilities, as we understand the term, are notably lacking. This signifies that the vast majority of the people who inhabit this continent live under simple conditions, often in isolated communities, and supply their wants largely from what nature provides in the immediate neighborhood. This might be regarded as a remarkable condition when it is remembered that Asia was the seat of the oldest civilization in the world. Explanations of this backwardness are not easy to find, nor are they important for our purpose; but it might be suggested that the causes lie more in deficiencies of the human resources than in physical conditions. Tradition, custom, and religion, have played a considerable part in maintaining the currents of life in

old channels, and the absence of commerce over vast areas has denied the people the stimulating effect of ideas obtained from other portions of the world.

China

Until about the middle of the nineteenth century, China, like Japan, was practically closed to the commerce of the outside world. One of the significant features in her foreign relations since 1850 has been the effort of European nations to gain an entrance to Chinese territory for the purposes of trade. As early as 1793, the British government sent a mission to China and obtained permission to carry on trade at Canton, subject to Chinese restrictions. At the close of the Opium War (1840-1842), Great Britain secured further concessions. Canton, Amoy, Foochow, Ningpo, and Shanghai were opened as treaty ports. Foreigners were permitted to reside in these places and to carry on trade, and Hongkong, was ceded to Great Britain. During the second war (1856-1860), in which France participated, China yielded further commercial privileges. The country granted the right of residence to ambassadors; Kowloon, opposite Hongkong, was ceded to Great Britain, and Tientsin was opened as a treaty port. More ports were opened after the Tientsin massacre of 1870.⁶

Anti-foreign sentiment has often resulted in clashes between China and foreign powers, the inevitable outcome of which was further concessions. As a result of the Japanese War (1894-1895) China was compelled to recognize the independence of Korea, to give up Formosa, and to open more ports. In 1897 Germany seized Kiaochow. Meanwhile, Russia forced China to lease Port Arthur. The Boxer Rebellion (1900) was a desperate effort to put a stop to the growing demands of the foreigners. It appears, therefore, that the extension of commerce with the outside world was not a deliberate policy of China, but the result of pressure on the part of certain countries to force foreign trading upon the country.

The internal political troubles of this country during recent years are partly a result of a conservative policy which still lingers among some classes, and partly due to restlessness growing out of foreign aggressions. No doubt, military leaders in the home country have been inspired by selfish motives and this has been a cause of trouble.

China possesses a considerable diversity of resources upon which a large industry and trade might be built, although in many cases the

⁶ Lippincott, *op. cit.*, p. 620.

extent of the reserves is not known. Moreover, any estimate of the possibilities of future industrial expansion must take into account the fact that China has from three to four times the population of the United States and that the mineral resources are nowhere near as abundant as they are in this country. Various estimates have been made of the reserves of coal and iron ore, but there is much difference of opinion among authorities as to what the actual conditions are. Possibly from 40,000,000,000 to 50,000,000,000 tons of coal, and 950,000,000 tons of iron ore are within the limits of a reasonable estimate. A comparative idea of the extent of these reserves, and of the wants that they might be called upon to serve, may be obtained from a little data from our own mineral history. Our Lake Superior ore region is the richest in the world. Since the opening of this area in about 1854 these mines have produced over 1,340,000,000 gross tons of ore.⁷ In other words, in a period of a little over seventy years, they have been called upon to produce a larger amount of material than China is supposed to possess. Since industrialization, at least in the modern sense, depends upon this base metal, China's known resources set very definite limits upon her expansion.

China is supposed to possess considerable supplies of petroleum, but as yet very little has been done to develop the industry. The known supplies of copper are far below future needs, and this is true, also, of lead and zinc. On the other hand, the country possesses large supplies of tungsten and molybdenum, and at times, it is one of the largest exporters of these metals. The mines contain, also, antimony, tin, mercury, and manganese, but as far as is known, the reserves are not large in view of future requirements. Some of these metals appear in the list of exports, although from the point of value, the amount is not large. In 1929, shipments of coal were 4,100,000 tons; of tin ingots and slabs, 15,100,000 pounds; and of antimony 44,200,000 pounds. The value of these three items was \$28,100,000, which was about 4 per cent of the total exports. The values were much less in 1932.

In the present status of industry and social life, the principal resource from which the people can live and supply commodities for trade is the soil. More than 80 per cent of the population is engaged in agriculture. Since the lands have been cropped for centuries, it is necessary continually to restore fertility to the soil. Cultivation is of the most intensive nature. In many cases the farmer practices the multiple system, bringing in from two to four crops a year. As a rule the farms are small, averaging from two to eight acres—too small, in fact, for effective

⁷ Lippincott, *Economic Development of the United States* (3rd ed.), p. 327.

cultivation with mechanical devices. But, at that, China is the world's leading producer of rice, soybeans, tea, kaoliang, sweet potatoes, millet, and vegetable oils. It ranks second in the production of natural silk, and about third in wheat and cotton. The production of wheat in 1932 was estimated at 800,000,000 bushels, and the commercial crop of cotton in 1932-1933 was estimated at 2,300,000 bales. The fields are also a source of large quantities of corn, millet, tobacco, fruits, and vegetables. The poultry industry supplies large quantities of eggs both for local consumption and for export; in fact, China is one of the largest exporters of this commodity. All in all, agriculture supplies most of the commodities for foreign trade. Manufactured goods, such as cotton yarn, shirtings, sheeting, silk piece-goods, pongees, and carpets and rugs, are among the exports, but they contribute only a small percentage to the total.

Although there are considerable numbers of cattle and hogs on the farms in China, meat and dairy products are not a factor in the foreign trade. The Chinese have never developed a dairy industry, and neither butter nor cheese is in general use. Concoctions manufactured from beans largely take the place of milk. Except in Mongolia, cattle are used mainly as draft animals, and the number is remarkably small, even for work purposes, considering the vast amount of farm labor required to produce the annual crops. There are probably not more than 30,000,000 cattle in the country. Here, as in other parts of the world, where the consumption of meat products is small, this condition is probably due to economic factors, for in the densely populated areas at least, the people could not support a cattle industry for food purposes.

The condition is somewhat different with hogs and poultry. The latter largely forage for themselves. In fact, "custom often decrees that any one family or household can raise no more than a specified number, as the fowls are allowed to roam about the village to find their food."⁸ But, at that, the country produces a prodigious number of eggs. It has been estimated that upwards of 3,000,000,000 a year are required to produce the albumen and yolk which enter the export trade. Hogs, also, are a part of the economy of the household, since they subsist in part, at least, on the waste. The country contains large numbers of them—from 60,000,000 to 100,000,000 head, according to some estimates.

Agriculture and sericulture supply by far the greatest values to the export trade. In this class are wheat, millet, soy and other beans, bean

⁸ "China," *Trade Promotion Series*, No. 38, p. 274.

oil and cake, eggs in various forms, cotton, silk, and various seeds which are the source of vegetable oils, chiefly rape-seed, sesame, and peanuts.

In the class of agricultural products, the soybean is the greatest single export, and it is sometimes the most important item in the entire export list. The value in 1929 of some 100,000,000 bushels was \$95,000,000. In this year over 150,000,000 pounds of frozen and dried eggs, and albumen and yolk were exported, and this says nothing of over 50,000,000 dozen of fresh and preserved eggs. The aggregate value of all the egg products sent into the export trade was \$33,000,000. Both values and quantities were much less in the years of the depression.

China is the original home of the silk industry. Knowledge concerning the culture of the silkworm reached Japan through Korea in about the third century of our era, and it came to the Mediterranean countries in the sixth century. The beginnings of sericulture and the manufacture of silk fabric are interwoven with the legends of the country, which indicates that the industry is of great antiquity. The Empress Se-ling-She, wife of Hwang-ti (2640 B. C.), one of the greatest of Chinese rulers, is said to have taken a personal interest not only in the care of the silkworm but in the arts of spinning and weaving, and she is credited with having invented a loom upon which the threads could be easily woven. For centuries the Chinese guarded the art of silk-making as a national secret.

Through the centuries silk has contributed enormously to the power of the country to produce wealth; and even to-day, this industry in its various aspects is one of the important sources of commercial income. China exports from 15,000,000 to 20,000,000 pounds of raw silk a year, to say nothing of the great quantities of silk waste and wild silk and silks which are shipped abroad in the form of fabrics.

On the side of imports, cotton piece goods are the most important. Rice, sugar, the products of petroleum, iron and steel, machinery, and chemicals and fertilizers rank high in the list.

The large amount of trade between China and Japan indicates that these countries have received a large reciprocal advantage from the opening of each others' markets. Possibly these two countries have been the greatest beneficiaries of the Open-Door policy. At any rate, upwards of 25 per cent of Chinese exports are destined for Japan, and from 20 to 25 per cent of the imports are derived from this source. The extent of Japanese trade with China is given in a former chapter. Japan imports a number of food products from China of which the soybean is one of the chief representatives; also certain quantities of cotton,

vegetable oils, and minerals. On the other hand, China is an important market for various Japanese manufactured goods. The great bulk of Chinese trade is among the Oriental countries; this includes not only Japan and Taiwan, but Chosen, Hongkong, Siam, French Indo-China, Netherland India, and British India.

Of the countries in the western world, the United States is the largest factor. From 15 to 20 per cent of the total imports into China come from this country, and the United States usually takes more than 10 per cent of Chinese exports. The United States receives from China a rather long list of goods including raw silk, silk fabrics, silk waste, carpet wool, rugs and carpets, wood oil, antimony, egg products, and hides and skins. We send to that country raw cotton, wheat, flour, tobacco, gasoline, kerosene, and a considerable variety of machines and equipment.

The United Kingdom, among the European countries, is the most important trader in Chinese markets. But this country rarely takes as much as 10 per cent of the total of Chinese exports, or supplies more than 10 or 12 per cent of the total imports. On the whole, European countries are relatively small factors in Chinese trade.

The total foreign trade of China grew most rapidly from 1900 to about 1925. It has since remained relatively stationary. As an annual average from 1901 to 1905 the total trade was \$382,200,000. For the similar period ending 1930 it was \$1,384,000,000.

It ought to be said that the rise of manufactures in a few Chinese cities is tending to change somewhat the character of the foreign trade. Production of the textiles is the chief industry, but factory production, in some places, has been developed in flour milling, foundry and machine work, the manufacture of cement and cigarettes, and the operation of silk looms and filatures. The most rapid strides have been made in the manufacture of cottons. In fact, to some extent, the progress is comparable with that of Japan. In 1914 Chinese industry engaged about 1,000,000 spindles, and in 1932, 4,285,000 spindles. The local development of the cotton industry is a matter of concern to Japan and the United Kingdom which have looked to Chinese markets as large consumers of their products. On the other hand, this development promises a gain to the countries which export raw cotton. Consumption of this material in China more than doubled in the years from 1921 to 1932.

India

This country was opened to direct contact with traders from certain European countries in the latter part of the sixteenth century. The

earliest contenders for this traffic were the Portuguese and the Dutch. Subsequently, British traders entered the market. Ships sent out by the East India Company visited Surat in 1608. English trade in Madras began as early as 1639. Then followed the development of trading influence in the Calcutta and Bombay areas. The French, meanwhile, had established themselves at various points in India; but they were practically eliminated in 1763. We are not concerned with the struggles of the East India Company in expanding its control, nor with the system of administration except to point out that "the Queen's proclamation of 1858, often called the Magna Charta of Indian liberties, announced that she had taken on herself the government of the Honorable East India Company's territories, and appointed Viscount Canning 'to be her first Viceroy and Governor-General in and over said territories, and to administer the government thereof in our name, and generally to act in our name and on our behalf, subject to such orders and regulations as he shall from time to time receive through one of our principal secretaries of state.'"⁹ This, of course, marked the beginning of a new era in the political relations of India with Great Britain, and eventually, in its trade relations with the rest of the world.

As in China, agriculture is the main occupation, and the products of the fields provide the principal articles of commerce, except that these are notably different from those of China. In India, also, methods of cultivation are in most cases primitive and inefficient and the standard of living is extremely low. This unfortunate condition is perpetuated through certain peculiarities of the land system. As in many other countries of the world, the natives long for land ownership. But, considering the enormous population, there is not enough available land for distribution in effective units. While the country contains many large estates, the native holdings range from two to one hundred acres. The system of dividing property among children upon the death of the parents leads to a further splitting of these areas until the individual holdings are very small and are sometimes distributed in several parcels in different locations. Under this arrangement effective organization and management of the farming industries is impossible.

The huge home production of foodstuffs is mainly for domestic consumption, as one might conclude from the fact that India has over 350,000,000 people to feed. From the large crop of wheat (340,400,000 bushels in 1932-1933) and of rice (2,439,900,000 bushels in the same season) there is only a little surplus for export, except from the rice

⁹ J. P. Buckley, *The British Empire* (Clarendon Press, Oxford, 1921), p. 148.

crop of Burma.¹⁰ Instead of foodstuffs, the mainstay of the export trade is two textile fibers, namely, cotton and jute, the latter being a peculiar product of Indian agriculture. These sometimes constitute one-third the total shipments abroad.

In like manner, the large number of farm animals serve domestic uses chiefly, instead of export commerce. In 1931 there were in the British provinces alone over 121,000,000 cattle, 31,000,000 buffaloes, 25,000,000 sheep, and 35,000,000 goats, to say nothing of large numbers of horses, mules, and camels.

The cereals named above constitute only a part of the foodstuffs. The pulses, chiefly gram, mash, and mung, are consumed throughout the country. Plantain, also, is a common food. In some places, large gardens are devoted to this product, but it is often grown in small patches around the homestead. In many parts of India, it ranks next to the mango as a staple food. Plantain meal is prepared by slicing the core, drying in the sun, and then pulverizing and sifting the residue. This plant is said to be the most economical crop not only with respect to its high yield but as to the many uses to which the plant and fruit can be put. With regard to its general utility, it resembles our Indian corn. An acre will support "a larger number of people than a similar area under any other crop, and the immense yield may be preserved for an indefinite period by drying the fruit and preparing the meal."¹¹ The flower heads are cooked, as a rule, in curries; the inner portion of the stem is prepared for food purposes; shoots and tops of the young plant are consumed as vegetables and as fodder for sheep and cattle, and the roots are fed to cattle. And finally, the fiber is manufactured into cordage, mats and coarse paper.

India produces a great variety of oil seeds, some of which contribute materially to the export trade. Sesame, grown in peninsular India, is used, among other purposes, in the manufacture of soaps. Large quantities enter foreign trade. Linseed is grown principally in Bengal and in the United and Central provinces. It also serves as an export. North India produces large quantities of cruciferous oil seeds, such as rape, toria, and sarson. Peanuts are a staple product in many parts of India and the product itself, or the oil, is an article of foreign trade. The list includes, also, cottonseeds, castor beans, copra, mahwa seeds, poppy, mustard, and niger.

Some European countries are large importers of these products.

¹⁰ Export of wheat in 1929 was 530,000 bushels and in 1932, 106,000 bushels.

¹¹ Lippincott, *Economic Resources and Industries of the World*, p. 412.

Poppy seeds, for example, are shipped to France, Belgium, and Germany; mahwa to Germany and Belgium; niger to Germany and France; copra to Germany, Belgium and France; linseed, peanuts and rape-seed have even a wider distribution. In fact, the oil seeds as a group constitute one of the largest items in the Indian export trade,

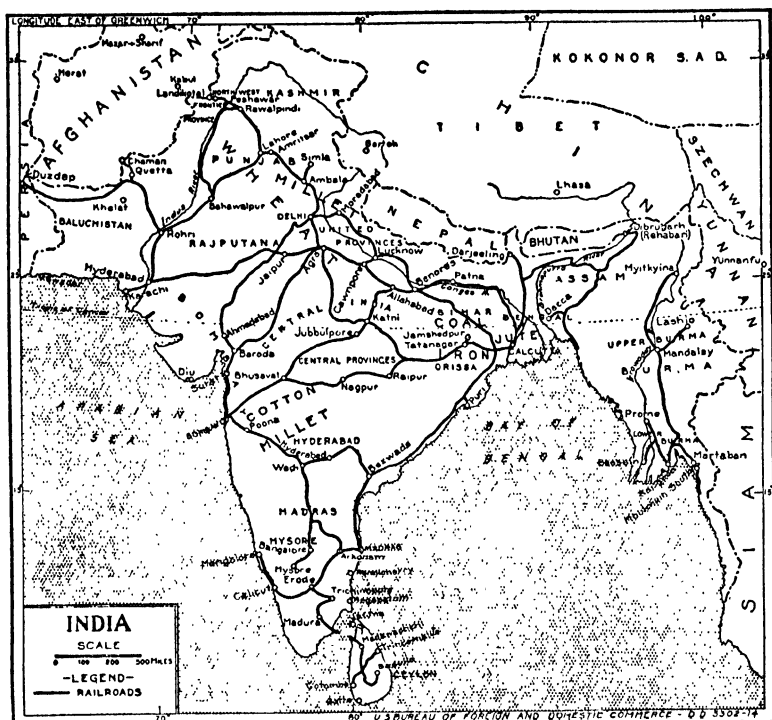


FIG. 12. INDIA—SHOWING RAILROADS

amounting to \$109,800,000 in 1932, although the amount was much less during the depression period.

The mineral resources of this country are rather diversified but they probably could not support an industry comparable to that in some European regions, or in the United States. Coal, is not abundant, as we understand the term in the western world, and is not of high quality; it occurs in a number of places. Some of the chief sources are in Bengal, Assam, and the Central Provinces. Iron ore is rather widely distributed, but as with coal, it does not exist in great bodies. Lead and zinc occur

in Burma, copper mainly in Burma, Bengal, Orissa, in the Central Provinces, and in some districts in southern India; manganese is found in the Central Provinces, and in Bombay, Mysore, and Madras; limited quantities of petroleum occur in Assam and Burma, and gold in Mysore. India is one of the important world producers of mica. The mineral output includes also tungsten and tin ores, chromite and jadestones.

Although, in a few instances, the mines supply a commodity for foreign shipments, the limited output is mainly consumed at home. With respect to iron and coal, India probably could not support a domestic manufacturing industry which was competent to supply a people who have ambitions to live on a higher plane. Much less can the country become a factor in the export trade of iron and steel products. The production of iron ore in 1930 was 1,800,000 tons; of coal, 23,800,000 tons; of manganese ore, 830,000 tons; of tin ore, 4,200 tons; and of lead, 79,700 tons.

Jute and its manufactures are among the main features of the export trade. In 1929 shipments of the raw product were valued at \$108,100,000 and of the manufactures at \$195,300,000. This fiber is a relatively new commodity in the commerce of the world. Its first appearance was in about 1832 as a substitute for hemp; but it now has become the chief material in a number of uses for which hemp was formerly consumed. India has a virtual monopoly over the supply. Attempts have been made to grow the plant in Mexico, Algeria, and Formosa, but without marked success. Jute requires rich moist soil and plenty of heat. These conditions exist in eastern Bengal and in the Ganges-Brahmaputra delta where a large part of the country is inundated annually by these streams. The rich alluvial deposit saves the farmer the labor and expense of restoring fertility to the soil. Jute is prepared for the market in much the same way as hemp. Shortly after the crop is ripe the plant is cut, and retted in water for about three weeks, and the fibers are then removed by washing and beating.

About one-third the crop is exported as raw jute; the remainder is manufactured mainly into gunny bags and cloth. The United Kingdom, the United States, and Germany are usually the largest consumers, but considerable quantities are shipped to France, Italy, Belgium, and Japan. In India, Calcutta is the principal region of manufacture, and the mills of this city supply both Indian and foreign needs.

In addition to the products named above, jute enters, also, as a raw material in the manufacture of carpets and rugs, which, if not as durable as these commodities containing other types of fibers, at least have the

redeeming quality of cheapness. The fabric enters into the manufacture of linoleums and tarpaulins; and the fiber is sometimes mixed with other materials, and with linen and cotton, in the manufacture of towels and sheeting.

In addition to the commodities already named, India is one of the three leading world exporters of cotton; Japan and China are important consumers, but considerable quantities are exported to various European markets. Tea is also one of the leading exports, and the foreign shipments include hides and skins, various kinds of lac, and manganese, chromite, tin, and lead.

As we have indicated already, India is one of the world's leading producers of mica. This substance is an illustration of nature's method of distributing useful products in only a few areas of the world, and in consequence, the dependence of consumers upon such regions. This substance in the form of "sheet or block muscovite is a necessity in electrical work; for this use there is no known substitute; and it is also used in the manufacture of spark plugs, radio equipment, etc. In addition, sheet mica is used for many purposes where a transparent, non-inflammable, nonshattering material is required. Ground mica is used for heat insulation in the manufacture of wall paper and for coating the surface of rolled roofing." ¹²

Except for the manufactures of jute, of relatively small quantities of coarse cotton cloth, and of vegetable oils, India has very little of the factory products to supply to external trade. Home-made, or small-shop production, is the chief reliance of the people for fabricated articles.

India is one of the chief markets of the world for the manufactures of cotton, a market which, hitherto, has been largely supplied from the mills of the United Kingdom. But in recent years, the supremacy of this country has been threatened more and more by exports from Japan. The growth of local manufactures in India has also tended to diminish somewhat the opportunities of the British industries. The production of cottons is India's most important factory industry. The number of spindles have increased from 6,500,000 in 1914 to 9,500,000 in 1932. Some 400,000 persons are employed in the mill industry. But, at that, cotton manufactures are the largest single import (\$223,100,000 in 1929), often amounting to from 20 to 25 per cent of the total. This country is also a large importer of iron and steel, of various types of machinery, mineral oils, sugar, chemicals and dyes. Although India is one of the largest

¹² J. W. Furness and L. M. Jones, "Mineral Raw Materials," *Trade Promotion Series No. 76* (U. S. Department of Commerce), p. 251.

producers of raw cotton, she imports considerable quantities from the United States to mix with the native material in the manufacture of higher count cloth. Sugar is imported from Java to supplement domestic production.

Hitherto, the United Kingdom has been the chief source of imports into India—42.4 per cent in 1929 and 36.4 per cent in 1932; and Britain is also the principal market for Indian exports—21.2 per cent at the first date named above and 27.9 at the latter. The Japanese share in the total trade approximates 10 per cent. India, like China and Japan, enjoys a large market in the Oriental countries. The annual average of the total trade for the five years ending 1931 was about \$1,900,000,000, which was about two and one-half times greater than the average for the five year period ending with 1906.

REFERENCES

For references see end of Chapter XIV.

CHAPTER XIV

ASIA AND OCEANIA (*Continued*)

In the last chapter we discussed certain economic conditions relative to commerce and industry on the continent of Asia, with particular reference to India and China. Although the other portions of Asia are not of great significance for present international trade, in some instances they supply moderate quantities of rather important products. Australia and New Zealand, at least with respect to food products and wool, make large contributions to foreign trade.

Other Continental Countries

If we exclude China and India, the export commerce of the other continental countries of Asia, in average years, does not exceed \$500,000,000. The most important of this minor group are Persia, Siam, French Indo-China, and Turkey. In all these cases, a single commodity dominates the export list—mineral oils in Persia, rice in Siam and French Indo-China, and tobacco in Turkey. But in all instances, the traditional products add something to the value of the exports.

Persia

This is one of the regions which has been left behind in the rush of modern progress. Centuries ago this country was the home of a busy industrial and trading people, but nothing remains to suggest the wealth and prosperity of the past. The country is somewhat smaller than that portion of the United States east of the Mississippi river, namely, 628,000 square miles, with a population estimated at 10,000,000. As might be gathered from the fact that the total imports, even in average years, do not exceed \$100,000,000 and are often very much less, the wants of the people are supplied mainly from local resources and from domestic activities. The population is supported chiefly from agricultural pursuits. The leading products are wheat, barley, fruits, rice, wool, gums, tobacco, cotton and silk. There is no dependable knowledge of the mineral resources, except perhaps of petroleum, but coal, copper, manganese, lead, cobalt and nickel are supposed to exist in considerable

quantities. Here and there, attempts have been made under governmental stimulus to encourage the development of a few manufactures; but as yet, enterprises of this description are in their merest infancy.

As far as the outer world is concerned, rugs and the products of petroleum are the only important manufactures. Rug-making is one of the ancient industries. Hand processes prevail in the preparation of the material and in the manufacture of the products. This industry was based originally on certain needs of the people. Domestic uses made the rug a necessity rather than a luxury, the purpose it serves mainly in the outer world. These commodities are used as prayer mats, divan covers, hearth rugs, sleeping blankets, and saddle mats. With the appearance of a foreign demand, production became a commercial enterprise. Years of experience have given workers skill in manufacture. Processes and design differ from region to region, as necessarily must be the case where people are widely separated over a great territory and where, at least in the past, when the art of workmanship was being acquired, they had little or no opportunity to communicate with each other. The methods of dyeing have also been learned by years of experience, and not a little experimenting has been required to learn what dyestuffs are suited for the work. Only vegetable materials are used in the finer stuffs, such as indigo, saffron, orchil, coccus, and madder. The wool is carefully selected not only with reference to the locality where it is produced, but also with regard to certain parts of the fleece which are supposed to yield the best results. Rug-making is a kind of cottage industry and the process of production is necessarily slow.

Rugs are usually the second in importance among the exports of Persia, petroleum products ranking first. In fact, mineral oils often amount to from 65 to 70 per cent of the total exports. But other items in this list are rice, almonds, dates, raisins, leather and skins, raw cotton, silk cocoons, wool, gum tragacanth and opium. The United Kingdom, Russia, and British India have been the largest factors in Persian trade. Rugs are the principal commodities received by the United States; we export to Persia iron and steel, machinery, automobiles and accessories. The textile fabrics are the most important item in the general list of imports.

Turkey

This country covers approximately 294,000 square miles of which about 9,200 are in Europe, just a little remnant of what once constituted an important dominion in this part of the world. The population is

estimated at about 14,000,000. The livelihood of the Turks depends largely upon what the fields produce, and agriculture also supplies the leading commodities for export. Shipments of tobacco are the most important, but Turkey sends out also eggs, barley, figs, raisins, cotton, wool, mohair, olive oil, opium, valonia, and shelled filberts, among the nuts. Home, or shop, industry supplies the fabricated articles, except for the small amounts that are brought in by import trade. Wheat and barley are the most important cereals; in 1931 the output of the former was 102,400,000 bushels and of the latter 74,800,000 bushels. But oats, corn, broad beans, chick-peas, lentils, onions and garlic are among the field crops.

Tobacco is the most important commercial crop. It was introduced indirectly from America and became a factor of economic importance about 1685. Farmers give particular attention to the quality which is required by the American manufacturers of cigarettes. About 70 per cent of the output of the Samsun and Smyrna districts is exported to the United States and the remainder is sent to Egypt and to various European countries. Turkish tobacco differs in important respects from the American product. The leaf is much smaller than the American, the average size being from three to four inches in width and length. Moreover, the leaf is thin, a thousand or more being required to average a pound of weight. But the most marked differences are in the taste, "the pungent, spicy aroma being distinctly different from the American type."

Turkey has produced cotton for many years. The staple is short and rough but it meets the milling requirements of a number of European countries. The product is exported to Italy, France, Spain, Germany, and, in recent years, small quantities have been shipped to the United Kingdom.

Turkey produces an amazing number of commodities, which is an indication of what might be expected from her enterprise when the country is supplied with the proper economic conditions. Among these are poppy seeds, from which oil is extracted; opium, olives, linseed, flax, licorice root, caraway seeds, mustard, attar of roses, and certain vegetable dyes and tanning materials, including madder, sumac, valonia, saffron, and gallnuts. Figs, raisins, walnuts, filberts, almonds, pistachios, and pignolias (the edible seeds of the pine cone) contribute something to the export commerce, although in each individual case the amount is usually small.

Thus far Turkey has been able to contribute little or nothing to the international commerce in minerals. The extent of domestic resources have not been revealed; but they contain coal, lignite, lead, copper, manganese, and iron. One of the world's greatest sources of natural emery is in a small area in the vilayets of Aidin and Menteshch in western Anatolia. The deposits were discovered less than a hundred years ago by an American mineralogist. The development of substitutes, such as carborundum and corundum thus far have had little effect on the demand for the native product.

Until the discovery of chrome in New Caledonia and Canada, Turkey produced more than half the world's supply. Meerschau, a fine white clay—called by this name because it was supposed to be the petrified scum of the ocean—is one of the unique products of the country. Some of the sources have been worked for more than 2,000 years. Native traders polish the substance, rub it with paraffin, and grade and pack it for market.

Manufactures are mainly of the home and shop type. They include cottons and woollens, rugs, shawls, silk and linen fabrics, and to some extent, embroideries and laces. Home industry produces a great variety of bazaar and specialty articles such as lamp shades, decorations, kimonos, meerschau beads, mosaic necklaces, ivory and alabaster goods, to mention only a few of the products. The Turkish rug industry is of minor importance compared with that of Persia and other central Asiatic regions. Turkey has reaped much of the reputation, and not a little of the profit, from the sale of Oriental rugs because of the accessibility of Constantinople as a collecting and selling point, and because of the enterprise of American and European buyers. Through this city passed much of the trade of Persian, Caucasian, and Turkestan rugs and carpets, to say nothing of some of the products of Afghanistan and Baluchistan, which arrived by way of the Persian Gulf.¹

The trade of Turkey, like that of all other countries, has suffered severely as the result of the depression which began in 1929. Imports and exports combined, in 1932, amounted to only \$89,000,000; they were \$197,000,000 in 1929, and upon previous occasions have somewhat exceeded this amount. Hitherto, Germany has been the most important factor in the import trade of this country, supplying 21.4 per cent of the total in 1931; Italy ranked second with 14.6 per cent; the United Kingdom third, with 11.3 per cent and France fourth with 10.1 per cent.

¹ Lippincott, *Economic Resources and Industries of the World*, p. 613.

On the other hand, Italy is usually the best customer of Turkey. The exports to the United States are chiefly tobacco, rugs, furs, sheepskins, opium, mohair, filberts and gum tragacanth.

French Indo-China

The rise of the foreign commerce of this area has been stimulated to a marked degree by the increasing needs of China, Hongkong, and Japan for the chief export, namely, rice, and by the growing need of other parts of the world for rubber, tin, zinc, and for various other commodities which Indo-China can produce. In addition to the commodities named above the export commerce includes pepper, cinnamon, cardamons, tea, kapok, copra, and sticklac. The total trade has expanded from about \$69,300,000 as an annual average for the years from 1901 to 1905 to \$200,000,000 for the five years ending 1930.

Siam

As with Indo-China, rice is the dominant element in the export trade, often amounting to from 70 to 80 per cent of the total. But in addition, Siam exports tin ore, rubber, copra, teak, and pepper, among others. The total trade in 1928-1929 was \$191,100,000.

Siberia

Of this vast area it has been said: "Western Siberia is one of the greatest areas of level fertile farm land awaiting development in all the temperate cereal-producing regions; eastern and southern Siberia is a great forest region, immensely rich in mineral, and already famed for its fisheries and furs. The climate of these regions is not unlike that of Minnesota and the Dakotas. With hardly lower temperatures, it is drier; and with many more hours of sunshine per annum, the effect of the more northern latitude is consequently modified."²

Siberia contains about 5,000,000 square miles and has a population estimated at 12,000,000. The completion of the trans-Siberian railroad exercised a marked influence on the settlement of the country. During the thirty-three years prior to 1892, when railroad-building began to get under way, the colonists in Siberia did not exceed 600,000. Since 1900, from six to ten million people have been added to this territory.

The country is of more interest to commerce because of its future than for its present capacity for consumption and export. Most of the

² B. Baievsky, "Siberia, Its Resources and Possibilities," *Trade Promotions Series*, No. 28 (U. S. Department of Commerce), p. 2.

area is inaccessible for the regular routine of commerce; its mineral resources are known only in a superficial way, and there is only limited access to its vast lumber regions.

Siberia is still an important source of furs, but even trapping is a vanishing industry. It has been claimed that with more intensive meth-

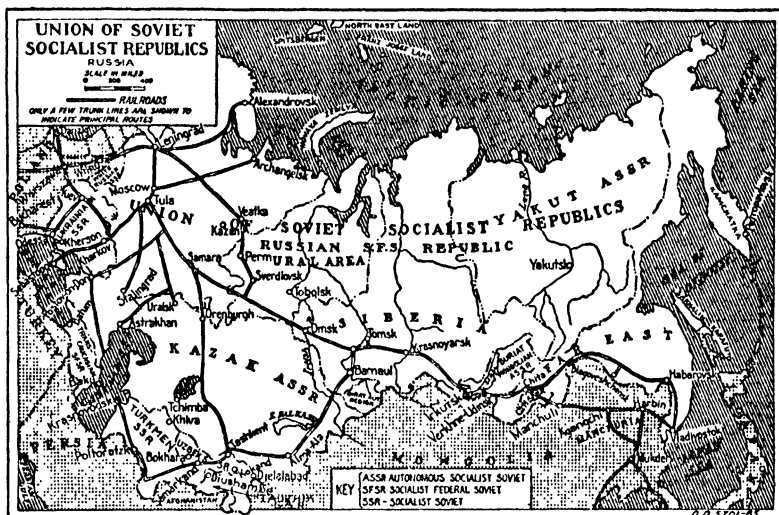


FIG. 13. UNION OF SOVIET SOCIALIST REPUBLICS

ods the animals are being exterminated more rapidly than they are multiplying.

Hongkong

Several regions on or near the coast of Asia, and some of the Islands to the south, need brief consideration because of their relation to international commerce.

Hongkong is one of these. Although the products for exchange which originate within this area constitute a very small proportion of its trade, a large commerce passes through the territory destined either for Asiatic consumption, or for purchase or sale in other parts of the world. This colony was ceded to Great Britain in 1841. It was then a desolate island, sparsely inhabited by fishermen. Trade gradually increased with the opening of Chinese and Japanese ports, and in the course of time, it became an important location for banking, dock,

steamship, and insurance companies. Business expanded, particularly after the opening of the Suez canal. The subsequent development of trade between the East and West, and the growth of inter-regional exchanges within the Orient itself, greatly enhanced the importance of this location as an entrepôt for many kinds of commerce.⁸

British Malaya

The commercial history of this area dates back to the exploits of the early European explorers who were mainly in quest of the original sources of spices. The composition of the trade has changed greatly during the last half-century with the development of new classes of industries in Europe and America, and with the demand for the type of raw materials which this portion of the world is able to supply. Moreover, the investment of European capital in mines and plantations has given a stimulus to expansion which probably would not have taken place, at least at this time, if the Orientals had followed their own course of development.

British Malaya includes the Straits Settlements of which the principal cities are Singapore and Penang, the Federated Malay States, and the Non-Federated Malay States. In a commercial sense, certain other British possessions might be included in the group, such as British North Borneo, Brunei, and Sarawak. In this area to-day the newer industries of the production of tin and rubber are of chief interest. Malaya is the world's most important source of tin, and with certain limitations the same statement might be made with regard to rubber. These two commodities usually constitute about half the total exports. But in addition, Malaya sends out considerable quantities of rice, dried and salted fish, canned pineapples, pepper, sugar, rattan, copra, and iron ore. The export trade in 1929 was valued at \$523,000,000 and the import trade at \$508,000,000.

Singapore

This city is an important collecting and distributing point for commodities assembled from a wide area and destined for consumption in Oriental countries, or for shipment west of Suez. Singapore, now a place of over 450,000 inhabitants, is on an island covering about 217 square miles, situated at the southern extremity of the Malay peninsula, at a natural focal point for trade moving in a number of directions.

⁸ *The Dominions Office Yearbook and Colonial Official List*, Wm. H. Mercer (Ed.) (Waterlow and Son, London, 1927), p. 309.

Only a small part of the commerce which passes through this area originates within the island itself. The greater part is delivered from more distant regions. The chief exports are tin, sugar, pepper, nutmeg, mace, sago, tapioca, rice, buffalo hides, rattan, gutta percha, rubber, gambier, gums, coffee, dyestuffs, and tobacco. In addition to these goods, which are more or less in the class of raw materials, considerable quantities of manufactured commodities pass through this center.

Over fifty lines of sea-going steamers touch at Singapore. In 1929 more than 9,700 steamers entered this port, and over 6,700 in 1932, with a net capacity at the former date of 15,500,000 tons, and at the latter of 14,300,000. In short, this location has become one of the most important commercial centers in the world.

Ceylon

This island, also, has played an interesting rôle in the early commercial history of the Middle East. It was visited originally by European traders who sought the valuable spices it produced. Cinnamon, in particular, was the article for which this island was known. Ceylon is still a large exporter of this article (5,400,000 pounds in 1932); but the demands of modern consumption have brought other commodities to the fore. One of these is tea, which usually composes more than half the value of the total exports; rubber often ranks second, and copra and fresh and dried coconuts rank third. The export list includes, also, coir fiber and yarn, cardamons, areca nuts, plumbago, and coconut oil. In normal years the exports often exceed \$150,000,000. The principal imports into the United States from Ceylon are rubber, tea, cacao, cinnamon, and plumbago.

Netherland India

We have discussed some of the aspects of the trade of these possessions in connection with the commerce of Netherlands. Included in this group are Java and Madoera and other islands known as the Outer Provinces. Agriculture supplies the most valuable portion of the export trade, with such articles as sugar, tea, coffee, pepper, tobacco, sisal and agave, but the mineral products also play a considerable part in the external trade. The islands produce gold, tin, petroleum, coal, and manganese, all of which are enumerated among the foreign shipments. Of smaller importance are tapioca, cattle and buffalo hides, rattan, kapok, copra and coconut oil, cinchona bark, copal and damar. In normal years the exports sometimes amount to more than \$600,000,000 a year. The United

States shares in this trade to the extent of about 10 per cent of the total. Rubber is our principal import, amounting to more than half the total value; but we also take from the islands considerable quantities of tapioca, tea, pepper, kapok, tin, copra, and palm oil.

Oceania

Some commercial possibilities of Australia were known in the early part of the nineteenth century, but under the prevailing system of transportation, this land was too far away to merit serious attention from emigrants. The developed areas of the United States and Canada, where jobs could be found without the need of building from the bottom and which were accessible at a relatively small cost, were much more attractive than the distant continent south of the Equator. Nevertheless, some progress was made in founding settlements. Such colonists as were in Australia in 1850 depended for the most part on sheep-raising and the mining of copper as the source of buying power for imported commodities. On the whole, the scattered numbers on the continent at this time were living unto themselves, with little hope, as it seemed then, of an enlarged contact with the outside world. Victoria and New South Wales, the most populous states to-day, contained less than 300,000 persons in 1850.

But gold made a great difference. A new era was opened in 1851 with the discovery of this metal at Summerhill Creek, twenty miles north of Bathurst, in the Macquarie plains. Other sources were discovered shortly after, and subsequently in the Bendigo field. The result was to give a great spur to immigration.

But gold alone would not have elevated the country to the place which it holds to-day. Throughout the eighty years or more of development, this metal has enriched the interested parties, but of far more importance in industrial development has been the supplies of base metals and the development of the field resources. These have formed a solid basis for industrial progress. Growing markets for these commodities were provided eventually because of industrial expansion in Europe and the United States where the demand increased for meat products, wool, and certain base metals. Meanwhile, the great improvements in ocean transportation, which began to exert an effect after 1850, made both Australia and New Zealand much more accessible for world commerce. To-day, gold, which was the original "primer," is of minor importance. In the last fifteen or twenty years, the output has never exceeded 700,000 ounces, and has frequently been much less.

Although gold, in the form of bullion and coin contributes large amounts to the exports, the baser things in the aggregate are of greater importance.

With over 2,900,000 square miles of territory Australia is of continental dimensions. But due to the vast stretches of desert and arid land only a small portion of this country is available for cultivation. In 1933

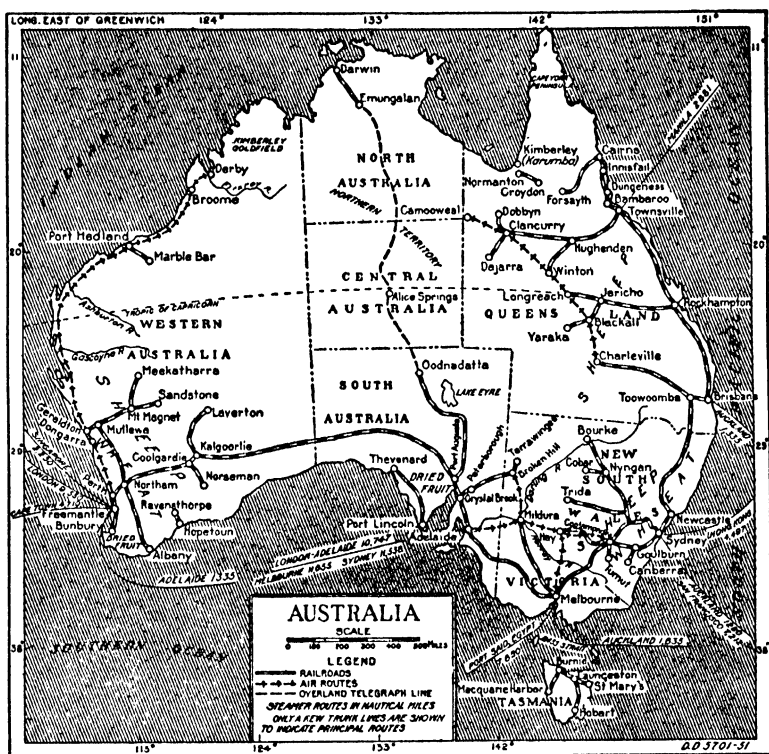


FIG. 15. AUSTRALIA—POLITICAL DIVISIONS AND RAILROADS

New South Wales, Victoria, and Queensland, the three easternmost states, contained about 80 per cent of the population, or if we considered only New South Wales and Victoria, the most populous divisions, about 65 per cent of the people were living in about 13 per cent of the continent. The total population in 1933 was 6,616,000.

In recent years, immigration has been relatively small, although larger numbers might be employed both in the development of re-

sources and in expanding industries. Migrations might have been much larger if Australians looked with favor upon the immigration of Asiatics. As a reason for opposition to such immigration they urge that this influx would lower wages and "destroy the fruits of all their past social experiments, and once for all prevent the country from reaching the object of her social legislation, i. e., a community of which every member is an educated person, with a fair amount of work, a fair amount of leisure, and a fair wage sufficient for comfortable existence, and the related pleasures which education teaches a man to expect and enjoy."⁴

As this statement suggests, Australia has been a kind of laboratory for social legislation. The ideals of the country are also contained in the statement just given. Legislation has been concerned not only with immigration, but with methods for the settlement of industrial disputes, with tribunals for the adjustment of wages, control over land ownership, the development of protective tariffs, and the control over railroads. In 1932 practically the whole railway system of some 26,900 miles was government-owned.

With her small population on the one hand, and with great capacity for production on the other, there is no possibility at present for local consumption to make use of the products of farming or mining. Australia is, therefore, one of the great surplus producing countries for certain commodities. In 1931 her farms contained 110,600,000 sheep, and although these animals constituted by far the most important branch of the livestock industry, the number of cattle was large considering the number of people to be sustained from their products. The number in 1931 was 12,200,000. The number of swine was 1,100,000.

Herein is the basis for the leading exports. In value wool usually amounts to between one-third and one-half of the total exports (832,000,000 pounds in 1931-1932, valued at \$98,000,000; the export was valued at \$299,000,000 in 1928-1929). Over 201,000,000 pounds of butter were shipped in 1931-1932, and the exports include large quantities of beef, lamb, mutton, tallow, condensed and dried milk, cheese, hides and leather. Australia is also one of the world's largest exporters of wheat and flour (127,000,000 bushels of the former and 6,200,000 barrels of the latter in 1931-32). Of the mineral products, other than gold, lead and zinc are the greatest exports (335,400,000 pounds of the former and 101,900,000 pounds of the latter in the year mentioned above). But silver, iron, coal, copper, and tin are enumerated among the mineral

⁴ J. P. Bulkeley, *The British Empire* (Clarendon Press, Oxford, 1921), p. 188.

products. Australia is also an exporter of eggs (9,900,000 dozen in 1931-1932), of fresh and dried fruits, sugar, and wine.

The manufactures include the processing of meats, the production of boots, shoes, leather, of food products, and (to some extent) of textile fabrics, clothing, furniture, drugs and chemicals. The estimated value added by manufacture in 1928-1929 was \$883,300,000, but was much less in 1932-1933. The general foreign trade has increased consistently from \$428,000,000 as an annual average for the five years ending 1905 to \$1,390,000,000 as an average for a similar period ending 1930. The greater portion of the trade, whether exports or imports, is with the United Kingdom; it is not far from 40 per cent of the Australian total. The United States usually ranks second in shipments to Australia, contributing from 15 to 25 per cent of the imports, but taking in return only a small portion of Australia's exports.

The agricultural industries of New Zealand are similar to those of Australia and the exports in most cases are identical, except that the trade is on a smaller basis. Except for some coal, gold, and silver, the mineral exports are of no importance. The total trade in 1929 amounted to \$501,000,000. Over 80 per cent of the exports are usually to the United Kingdom, and this country supplies New Zealand with from 40 to 50 per cent of the imports.

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CHAPTER XV

COMMERCE OF AFRICA

The commerce of the greater part of this continent has been discussed in sections of former chapters, in connection with the trade of the countries which claim dominions in this vast area. But it might be helpful to study commercial relations as they emanate from the continent itself.

General Conditions

Africa is a large division of the earth, with something over 11,000,000 square miles and no one knows how many people; but the numbers are variously estimated at from 100,000,000 to 125,000,000. However this may be, most of the natives have not yet attained to a stage of culture where they can make significant contributions to world commerce. In normal times, the trade of Africa is about \$2,500,000,000 a year, which is about 4 per cent of the total of the world. Egypt, the Union of South Africa, and Algeria contribute more than half this amount. Thus it happens that the trade of the other divisions, however large in area, or however rich in potential possibilities, are at present adding only mediocre amounts to the commerce of the continent.

Yet, in some respects, African trade is of more significance than the figures would indicate. In some cases, the resources are unusually abundant. This applies to the gold, diamond, and copper resources of which the first two are the most prolific hitherto discovered. Thus there has been made available for world consumption increased quantities of those substances. Moreover, some products are more or less unique, which means that if Africa is not the only source of supply, it is one of the few areas from which goods of this type may be obtained. Then, it should be added, that even for some common commodities, such as cotton, wool, and wheat, the annual African quota is of material assistance to certain countries in meeting their needs and, on the other side, the African markets for goods are even now worthy of development.

In spite of its great size, the larger part of Africa cannot be made available for the uses of man. The Sahara, the Libyan and Egyptian deserts, which stretch across the broadest part of the continent, are

blighted areas of huge dimensions, covering possibly from 3,000,000 to 4,000,000 square miles, a territory at least the size of the United States. These deserts are dotted here and there with oases, three or four hundred in number, where some kind of industry is possible. Moreover, the great tropical forest belt prohibits settlement, at least by the white man, and on either side of this the vast stretches of savannas are usable only under certain conditions. Only a few parts of northern and southern Africa are blessed with adequate rainfall—namely, the mountain slopes near the Mediterranean and the southeastern slopes of South Africa.

Thus it is easily understood why the vast streams of emigrants, who create industry and commerce in new lands, avoided the continent near Europe, and sought homes in the Americas, and in the even more distant lands of Australia. People brought up under the conditions that prevail in temperate areas could not survive in most of this continent. Even if survival had been possible, a long, painful process of adaptation would have been necessary before they could have carried on economic life as they understood it. The explorations of Livingston, Stanley, and others added nothing to the attractiveness of the place; even to-day the European population in the territories claimed by the great powers is very small. In most cases, such persons have gone to Africa for specific purposes, such as to develop plantations, or to engage in mining, or sometimes, to conduct mercantile businesses of some description. In the Union of South Africa to-day, which is as habitable by white races as any portion of the continent, the European population numbers less than one-fourth the total. In French Equatorial Africa, in 1931, the Europeans numbered only 4,600 in a total population of 3,192,000. In the Belgian Congo, about the same year, the white population numbered only 25,100 in a total of from 8,000,000 to 10,000,000. Similar conditions prevail over the remainder of the continent.

This signifies that practically all the manual labor is done by natives who have not been trained to the ways of modern industry, who for the most part, can contribute little or nothing of the type of skill which industry, or even farming, requires, and who must work under careful direction of the few whites who have been called to Africa to conduct some kind of industry in which Europeans, or Americans, are particularly interested.

Some progress has been made in railroad-building in recent years, but at that, the continent is poorly provided with this type of transportation. The total mileage is about 22,000 miles, over half of which is in the Union of South Africa. In Egypt there are 2,100 miles and in Algeria

about 3,000 miles. Here and there, around the rim of the continent, are various short lines designed to connect some interior point with a port, and recently a railroad has been constructed north of Rhodesia towards the center of the Belgian Congo. Over the remainder of Africa, the rivers are the only outlet to the coast.

Except for a few regions, water transportation is of no great economic value under existing conditions. Much of the territory through which the largest streams flow could not supply a sizable volume of traffic. Most of such areas are inhabited only by natives, who produce for external commerce only the most obvious products of nature. Most of the streams are interrupted in some part of the course by falls, and great improvement would be necessary to fit them for continuous navigation. Finally, the regions which they serve, in most instances, produce only insignificant quantities of the materials which are wanted in the outer world.

Mineral Resources

Practically all the great minerals are known to exist in various parts of the continent, but in only a few places, where Europeans or Americans have carried on active exploitation, is the extent of the sources known. Limited quantities of the following are mined in some of the Mediterranean countries and supplied to export: iron, zinc, and lead ores, coal, petroleum, and phosphate rock. France is the principal consumer of phosphate rock produced in Algeria, Tunisia, and Morocco. Practically every division of Africa reports the existence of some mineral, such as tin in Uganda, Nigeria, Tanganyika, Belgian Congo, and Sierra Leone; diamonds in Belgian Congo, Tanganyika, Gold Coast and Portuguese East Africa; mica in Ethiopia and Madagascar; and gold in many places. But with respect to extent and diversity of resources, as far as is known at present, the southern part of the continent contains the greater stores. This is particularly the case with gold, diamonds, and copper. But in addition, this section contains vanadium, chrome, tin, manganese, iron, coal, platinum, and osmiridium, all of which are undergoing development.

Gold

As indicated above, gold is produced in a number of places in Africa, but over 90 per cent of the output is obtained from the Transvaal, Cape Colony, Natal, and Rhodesia. In fact, this area usually produces more

than half the world supply; North America, with the United States contributing the larger portion, is the only other important producer.¹

South Africa began to emerge as a gold producer in the decade from 1880 to 1890. This metal was discovered in the low range of hills, known as the Witwatersrand in 1885, and was followed by the usual rush. Johannesburg sprang up almost overnight. These resources have attracted a large amount of foreign capital and have stimulated immigration both of European and native labor. Exploitation has contributed materially to the industrial growth of the Union, and, of course has added greatly to the prosperity of the foreign trade. Nor is this all. These great hoards of the yellow metal have filtered into the channels of trade of many countries, where they have affected world commerce in various and sundry ways, adding greatly to the world's stock of monetary gold, increasing the basis for bank credit, and developing lending power. But, it should be remembered, all this gold is not available for money purposes. A considerable proportion is destined for use in the industrial arts, and this use seems to be increasing. Possibly 30 per cent of the new production is destined for consumption in this manner.

The average annual production of gold in the Union for the period from 1921 to 1925 was 8,600,000 fine ounces; during the years from 1926 to 1930, it was 10,300,000 ounces; and for 1932, 11,500,000 ounces. Part of these amounts was contributed by Rhodesia which is also a considerable producer. The production of gold, like everything else, is affected by costs, and by its value expressed in other commodities. In short, its value, also, rises and falls. In periods of high commodity prices it is affected adversely, as was the case during the latter years of the late war and for some time thereafter. Amazing as it may seem, this called for demands on the part of some producers for a bounty on production. Since 1929, with lower commodity prices, and with the various artificial schemes to affect its value, the metal seems to have come into its own—for a time at least.

Diamonds

Until the discovery of diamonds in South Africa, no region in the world could have been considered a dominant producer. India, Brazil, Borneo, New South Wales, and even the United States, among others, contributed something to the supply. From the beginning of production in about 1727 to 1850, the output of Brazil was estimated at 10,000,000

¹ In 1930 the output of South America was 450,000 fine ounces, of Europe 1,160,000 ounces, of Oceania 622,000 ounces, and of Asia 1,232,000 ounces.

carats. But since the rise of production in Africa, Brazil has declined in relative importance.

In this newer part of the world the rough diamonds seemed to have been handled by many persons who did not recognize their worth. In some instances these rough "stones" were even compounded with the mud plaster in the walls of farmhouses. Not until a little son of a Boer woman played with a stone of unusual attractiveness was the curiosity of anyone aroused. This first stone was subsequently sold for \$2,500.

The first discovery in South Africa was in 1867. This was followed shortly by others, until a number of sources had been unearthed. In the course of time, these properties were bought up and consolidated into a great organization which now largely controls the diamond market of the world.

The average output of diamonds in the Union for the five years ending with 1925 was 1,600,000 carats, and for the similar period ending with 1930, it was 3,800,000 carats. South Africa is also a producer of two rare metals, namely, platinum and osmiridium. In 1930 the output of the former was 47,000 ounces and of the latter 5,600 ounces.

Copper

Although this metal has been mentioned as a resource of several regions in Africa, the only places where it has been developed, at least on a commercial scale, are in South Africa. Here the metal occurs in a region "bounded on the south by the mountain range in North Rhodesia, and extending through the eastern part of the Belgian Congo to the Nyanza Lakes on the north."² Mining in this area is of recent origin, but development has been carried to such an extent that the Congo and Rhodesia now contribute a large annual quota to the world's supply. In fact, Belgian Congo now ranks about fourth among the world's copper producers, with an output about one-fifth that of the United States, which is the most important producing division. This industry, measured in terms of tonnage, more than doubled in the years from 1921 to 1930. The output in the latter year was 138,000 tons. To this should be added, to get the contribution of the southern portion of Africa, the production of Rhodesia, which was about 10,000 tons.

Varied Mineral Products of Southern Africa

This section of Africa is not only the largest world's producer of gold

² J. W. Furness and L. M. Jones, "Mineral Raw Materials," *Trade Promotion Series No. 76* (U. S. Department of Commerce, 1922), p. 170.

and diamonds, but its mines yield large quantities of chromite, vanadium, and asbestos. These three substances now play an important part in industry. With reference to chromite, the metal used in various alloys of steel, it has the power of producing resistance to corrosion and abrasion, and it imparts toughness to the alloy. Vanadium is also an alloy metal. Asbestos has many uses, as in the manufacture of asbestos textiles, curtains, brake linings and cloth, and as insulating material. The mines of this area produce also sizable quantities of silver, coal, and iron. Only small amounts of most of these materials are used in local industries and they therefore appear as exports. In 1932 the shipment of gold bars were valued at \$231,600,000.

Agricultural Products

Unlike the other great continents, the customary cereals play only an insignificant part in African commerce. The principal producing regions are in the Mediterranean countries and in the Union of South Africa. Algeria, Tunis, and Morocco are the principal exporters of wheat, but the aggregate of these three countries, even in normal years, is not in excess of 35,000,000 bushels. Several sections ship rice abroad, but Egypt is the most important (103,000,000 pounds in 1932) of them. The Union of South Africa, Kenya and Uganda export small quantities of corn. The possibilities of foreign trade in the cereals may be understood from a statement of the production in the leading countries. This is given below.

PRODUCTION OF LEADING CEREALS; CERTAIN AFRICAN COUNTRIES; 1931.
(1,000 BUSHELS)

	WHEAT	BARLEY	OATS	CORN
Algeria	25,600	38,100	8,200	292
Morocco	29,680	58,600	1,600	5,300
Tunisia	13,900	8,200	3,200	197
Egypt	46,000	9,600	^a	76,400
Union of South Africa....	10,100	1,040	5,900	61,600

Cotton is the most important textile fiber produced in Africa. Eight or ten different regions are producers, but the output of Egypt is normally six times as great as all the others together. Upwards of 100,000,000 pounds were produced in Uganda, Kenya, Nigeria, Tanganyika, and

^a Production not given. For Union of South Africa data are for 1930-1931. Data for the table completed from *Foreign Commerce Yearbook* (U. S. Department of Commerce), 1932, II, pp. 51, 92, 97, 102.

the French portions of Africa, compared with 615,000,000 in Egypt in 1931. The Union of South Africa is the only important producer of wool. A number of regions are exporters of hides and skins. Small quantities of coffee and sugar also find their way into the channels of international commerce. If importance were measured by poundage, we should have to give a high rank to the peanut. It is a product of many regions, but more particularly of French West Africa, Nigeria, Gambia, and Mozambique, which together shipped abroad in 1930 upwards of 1,680,000,000 pounds valued at \$30,100,000.

Miscellaneous Products

Africa produces a great number of indigenous products which, in one way or another, are useful to modern industry. In most cases these are harvested by natives in the form which nature has produced them. Palm nuts and oil are exported from Belgian Congo, Nigeria, Gold Coast, Gambia, and the French portions of Africa; cabinet woods from the Gold Coast and French Africa, among others; ivory from Ethiopia, Kenya and Uganda; cashew nuts from Mozambique; civet from Ethiopia; kola nuts from Gold Coast and Sierra Leone. Madagascar exports butter beans, cassava, tapioca, cloves, vanilla, raffia, ylang-ylang oil; various areas are exporters of coconuts and coconut oil, and of shea butter, copal, kapok, to say nothing of various kinds of tanning material. Rubber is exported both as a plantation product, and as a cruder material extracted from trees and shrubs. The Gold Coast and Nigeria are large exporters of cacao, over 600,000,000 pounds in 1930.

Algeria

From the point of view of the external trade, the Union of South Africa, Egypt, and Algeria, named in the order of their importance, are the largest trading nations in Africa. The principal commercial relations of the Union of South Africa are with the United Kingdom which, in 1932, took 42.1 per cent of the exports and supplied the Union with 45.4 of its total imports. Algeria trades mainly with France. In 1929 this country received 72 per cent of the total Algerian exports and supplied 77.4 per cent of the imports. The commerce of Egypt is more widely distributed, but, at that, the United Kingdom in 1932 took 38.4 per cent of Egyptian exports and supplied 24 per cent of the imports. Political relations are often a factor in directing the course of trade, notably in cases where a richer country has large investments in the dominions, as is the case with the relations of France to Algeria, and of the United

Kingdom to the Union of South Africa. Egypt is to all intents and purposes an independent country, but its development has been aided materially by assistance from Britain. Moreover, the United Kingdom is one of the principal consumers of Egypt's leading export, namely, cotton. The relative position of these three divisions in the total trade of Africa is shown in the following table.

TRADE OF GIVEN COUNTRIES COMPARED WITH THE AFRICAN TOTAL ⁴

	1929		1932	
	IMPORTS	EXPORTS	IMPORTS	EXPORTS
Algeria	\$ 229,647,000	\$ 151,998,000	\$166,726,000	\$147,645,000
Egypt	279,960,000	258,310,000	98,048,000	97,047,000
U. of So. Africa .	406,193,000	393,910,000	159,001,000	320,719,000
Total for three countries . . .	\$ 915,800,000	\$ 804,218,000	\$423,775,000	\$565,411,000
Total for Africa .	\$1,590,800,000	\$1,242,900,000	\$794,300,000	\$624,600,000

Farming is the main occupation of the people of Algeria although this country does produce a number of minerals for export. The production of cereals was given in a table on a former page. Wheat, barley, and oats, are among the exports, also potatoes, peas and beans, mainly for the French market. But the export of wines is always the most important item in the list, amounting from a third to a half of the total. In addition this country exports esparto, a kind of grass used in textile and paper manufacture; cork, both in the crude and manufactured forms; iron, lead and zinc ores; and phosphate rock. Dates, olive oil, tobacco, and hides and skins contribute something to her foreign shipments.

Egypt

With respect to industry, Egypt is not much more than a fertile strip through the desert. By a kind of accident of nature, the waters of the northeastern highlands of Africa must seek their outlet to the Mediterranean instead of the Red Sea, or the Indian Ocean, thus creating a long narrow oasis, and breaking the monotony of the desert. The life of some 14,000,000 people depends on the waters of this stream. Of the total area of Egypt, estimated at 386,000 square miles, the occupied lands comprise 13,600 square miles. A large population, therefore, is crowded into a very small area. Since the life of the people depends on the waters

⁴ *Foreign Commerce Yearbook*, 1933, pp. 304, 344.

of the Nile, it has become necessary to provide greater regularity in the volume of the stream than nature customarily supplies. Hence, several great engineering projects have been completed for this work.

Egypt produces wheat, barley, corn, rice, and beans, and raises cattle, buffaloes, sheep, goats, asses, mules, and camels. As a commercial crop, however, cotton overshadows all other productive activity, and this product dominates the export trade, constituting normally from 70 to 80 per cent of the total. As with other countries, Egypt has had her troubles with overproduction. She has employed various schemes which suggest methods in the United States, but with doubtful success.

Besides the agricultural industries, some energy is devoted to the production of phosphate rock, manganese ore and talc, but these play a minor part in the foreign trade. And this is true also of manufactures. Governmental policy seems to encourage the development of certain industries; but the only significant representatives of this class are cigarettes, sugar, boots and shoes, leather, matting and basket work, and some little manufacture of the products of petroleum.

The Union of South Africa

First settlement of this part of the world by Europeans dates back to the days of the early Dutch explorations. But immigration has never been large. Even to-day the population of European extraction constitutes only a small percentage of the total. The development of the varied mineral resources have been the chief attraction in recent years. The discovery of gold, the development of the diamond industry, and the later exploitation of the base metals, have contributed mainly to the upbuilding of this section. At present, however, agriculture is of considerable importance, not only supplying the needs of the inhabitants, but in some instances producing surpluses for export. The consolidation in 1910 of the colonies of Cape of Good Hope, Natal, the Transvaal, and the Orange River Colony made possible a unified policy for the whole area. The new government adopted measures for the protection and development of local industries, with the result that the country is now able to supply many of its own wants from goods of domestic fabrication. For 1930 the value added by manufacture was \$271,400,000, which was an increase of about 50 per cent over the ten years preceding. Taking into account the activities in mining, manufacture, and farming, economic conditions in this country are more diversified than in any other region of Africa.

Agriculture is one of the major activities. Production includes wheat,

barley, oats, corn, potatoes, sugar cane, tobacco, and peanuts, among others, considerable attention is devoted to the production of fruits, including apples, peaches, prunes, and apricots, and both the dried and fresh products enter international commerce.



FIG. 17. SOUTHERN PART OF AFRICA

Aside from the mineral products, wool is the most important export. Over 370,000,000 pounds were sent abroad in 1932. But considerable quantities of fresh and frozen meat, butter, eggs, corn, sugar, hides, and skins, angora hair, and tanning materials are among the foreign shipments.

Summary of Industrial Conditions in Africa

The greater part of the continent is claimed by European powers—Britain, France, Italy and Belgium maintaining the dominant interest.

For administrative purposes the contingent is split into twenty or more divisions, some of huge size, as with French Equatorial Africa which covers upwards of 915,000 square miles, Belgian Congo with 920,000 square miles, and Nigeria with 373,000 square miles. Practically all the parent countries have invested large sums in the development of certain resources which give promise of immediate returns. Mining is the most important enterprise; but certain agricultural products have attracted attention, as with the production of cotton and cacao. No doubt the expectation is that eventually the colonies will not only supply greater volumes of goods to commerce, but will become of increasing importance as markets for the commodities of the home country, and incidentally provide a source of profit in the development of resources of exceptional promise. Expansion of this kind presupposes provision for transportation and for other commercial facilities, sometimes actually in advance of the developed needs. The limitations upon industrial expansion in this continent have been suggested in other connections.

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CHAPTER XVI

LATIN AMERICA

Latin America includes not only the continent of South America but Cuba, Mexico, the Central American countries, and various small islands in the Caribbean sea. In the northern countries, from the point of view of industry and trade, Cuba is the most important and Mexico ranks next, although the commerce of the two is often approximately of the same magnitude. In South America, Argentina, Brazil, and Chile have far surpassed the others both in the character of their industries and in volume of commerce.

General Background

While practically all of Latin America has been trading with the outside world since the end of colonial times, and, in some instances, since before that time, the great era of development came after 1870. The movement to secure independence from Spain started in Argentina shortly after 1800 and spread northward until practically all of Spanish America was involved in the movement. Brazil, which was in Portuguese hands, was not included in this development. In the course of time, most of the former Spanish dominions gained their freedom. Cuba was a notable exception. This island remained under Spanish control until the close of the Spanish-American war.

But freedom did not bring immediate economic blessings. Many things had to be accomplished before economic development of the modern type could begin. A long era of political disturbances lay ahead of most of the countries—a condition which prohibited investments from the richer countries and restrained immigration. Assistance in both these respects was necessary before the foundation of economic growth could be laid. What is of equal importance, many of these countries had little to offer which the outside world needed. But in the course of time, industrial development among some of the countries of Europe and in the United States created a demand for their products. With the establishment of stable governments, capital began to flow in to build

railroads, open resources, acquire plantations, and to supply the necessary facilities for commerce. Eventually, investments were made in many types of enterprises, such as mercantile establishments, hotels, city real estate holdings, port and harbor improvements, public utilities, all of which promoted economic expansion. Meanwhile, European emigrants began to see, in some of the countries, desirable places to live. The development of ocean transportation made possible cheap haulage of bulky products. Subsequently, the introduction of methods of refrigeration enabled certain regions, such as Argentina, Uruguay, and Brazil, to engage in the livestock industry and to develop the by-product industries which are related to meat-packing. The building of the Panama canal contributed a useful trade facility to the west coast countries of South America. The incidence of most of these changes fell after 1870.

Reasons for Slow Development

Geographers of the time were wont to cite political conditions as the chief reasons for this backwardness. There was much truth in this contention. The old Spanish colonial régime did not begin to disappear until the first decade of the nineteenth century, and there followed many years of political upheaval before even the strongest of these countries had put themselves on a stable basis.¹

But other reasons were involved. The character of the people had much to do with their disposition toward work and enterprise. Latin Americans have looked with scorn on what they call North American plutocracy. This probably means not so much antipathy to wealth as such, as to the toilsome methods and labor and accumulation, and much more, the idealization of wealth as an important goal in life. This signifies that certain social values of Latin Americans are at variance with those of the people north of the Rio Grande. The early history of Latin America, which probably still lingers in the traditions of many, was filled with romance, with the lure of the precious metals and conquest over the Indians. This area has never had a covered-wagon period, with immigrants who were to become the backbone of new settlements grinding their way by hand labor and by thrift into such prosperity as the new areas would yield. Whether or not the conditions under which people are forced to live are largely influential in molding their character, it is nevertheless true that the upper classes in Latin America, from whom we should look for enterprise in business matters, are largely deficient in this quality.

¹ *Harper's School Geography* (Harper and Brothers, New York, 1878), pp. 78 ff.

This attitude toward work has been a handicap in the development of wealth. As a rule, the Indians are willing workers, and the burden of manual labor is borne without complaint. The immigrants into Brazil, Argentina, and Chile perform a large amount of menial labor; in this respect immigration has been a great boon. Brazil, Argentina, Chile, and a few other countries, have actively encouraged immigration with the result that, in the three countries named, there is a considerable supply of European labor. But the upper classes, as a rule, are not disposed to work. It has been said that "in Peru the people would starve were it not for the Indians, who, having no false pride concerning manual work, are both industrious and effective as agriculturalists. It is true that the Spanish Americans have inherited, along with a mild scorn for industry, some of the indolence characteristic of the Spaniard, and there is no doubt that these characteristics have been deterrent elements in the Latin American civilization."² But additional factors, other than the character of the people, have been responsible for tardy growth.

With respect to export trade, at least three conditions were necessary for development: first, local facilities for the economic development of the countries, such as railroads, improved ports and harbors, and banking arrangements; second, the willingness of foreigners to invest in the future industrial possibilities of these countries; and third, prospective foreign markets for the surplus, which meant the ability of these regions to produce the commodities which were in demand in the outside world. The importance of a market is not measured alone by the number of people resident within a given area, but by the nature of their industries, the kind of resources, and the character of work the people are able to perform. The purchasing power, which really makes a market worth while, is the product of many factors.

In regard to numbers, the population of even the more progressive South American countries was relatively small in 1870. At this date, the population of Brazil probably did not exceed 10,000,000; of Argentina, was less than 2,000,000; and of Chile, about 2,000,000. While immigration had already begun, bringing in considerable numbers of Italians, Germans, and to a smaller extent French, English and Americans, the great waves of newcomers which were to contribute materially to the opening of mines and plantations and to the development of industries had not yet begun to roll in.

² C. S. Cooper, *Latin America, Men and Markets* (Ginn and Company, Boston, 1927), p. 17.

Under the Spanish régime, the markets of all Latin American countries, under the dominion of that country,³ were rigidly controlled for the merchants of that country. While these restrictions were modified somewhat toward the end of the Spanish period, trading was still surrounded by great handicaps. Independence brought greater commercial freedom, but, at that, the periodic revolutionary disturbances both handicapped local development and retarded the growth of trade with foreigners. Further, settlements in the back country were frequently subjected to raids by the Indians; many Englishmen, possessed of some amount of capital, who had established themselves as cattle-farmers "under the protection of modern rifles," were obliged to turn their attention to sheep-raising and general agriculture as "offering less tempting plunder to the Indians."

What the Latin American countries needed as much as anything else for the development of home and foreign markets was the investment of foreign capital. The nature of their industries was such that there was little or no surplus for investment in plantations, mines, or railroads. They depended on foreigners for this service.

Then, "once a thinly populated country or large area starts being developed, its demands for capital are insatiable. The virgin soil of the new country can produce a large return on the capital sunk into it—sufficient usually to pay good interest on such capital and leave a surplus for the producer to expend on finished products imported from the manufacturing countries. But at the outset everything, which in Europe has grown up in the course of centuries, has to be created as quickly as means will allow. Roads, harbors, railroads have to be constructed; rapidly growing centers of population have to be supplied with water works, drainage, gas, electricity, tramways, and so on. With their practically untapped resources, such countries, given fairly honest government, can afford such good returns as to attract foreign capital to a very large extent."⁴

This was the state of most of the countries south of the Rio Grande in about 1870. As yet only the most obvious resources were known, chiefly a few minerals like copper and gold, and the products of field or forest. For this reason, the products for which the countries are known to-day were not, in most instances, those which were produced or exported in 1870.

³ Brazil was originally a Portuguese colony. In 1807 the royal family of Portugal emigrated to Brazil, and the country existed as a kingdom, or empire, until 1889, when the republic was established.

⁴ A. E. Davies, *Investments Abroad* (A. W. Shaw Company, Chicago, 1927), pp. 6, 7.

Cuba

Industrial affairs in Cuba did not begin to show marked improvement until the close of the Spanish-American war. In previous years the country had been burdened with heavy taxes, threatened with a constantly mounting debt, often rent by revolutions, and disturbed by local political conditions. Much of the revenue was transferred to Spain to pay interest on the accumulating debt, which, in 1897, was estimated at over \$400,000,000, or about \$283 per capita. Very little of the funds collected in the island were kept at home for local improvements.

Conditions were greatly improved after the establishment of the new government. For one thing, increasing quantities of capital were invested in the island for the purpose of developing its leading industrial opportunities. In 1925 American capital alone in sugar properties was estimated at \$750,000,000; upwards of \$50,000,000 was invested in the tobacco industries and large amounts in factories, railroads, mining, banking, public utilities, and in the development of various kinds of real estate. All in all, in this year, some \$1,360,000,000 of American capital was invested in the island, which was said to have been 85 per cent of the total foreign holdings.

The increase in the total commerce of the island from \$153,000,000, as an annual average for the five years from 1901 to 1905, to \$826,000,000 for a similar period ending 1920 is one indication of the benefits under the new régime. Overproduction, and low prices for sugar reduced the value of the trade materially during the next decade, but in spite of the various troubles, the total commerce for the five years ending 1930 averaged about \$490,400,000.

Marked development occurred in Cuban industries. With the exception of sugar, liquors, and of various products of tobacco, there is little or no manufacturing for export. But local industries supply many domestic needs and thereby reduce dependence on the outside world. The grinding of sugar cane and the making of cigars, cigarettes, and other tobacco products are the leading industries; but shop and factory production includes clothing, footwear, some textiles, paper, glass and cement.

The metal industries are of little importance, notwithstanding the fact that Cuba has considerable resources of iron ore, copper, and manganese. These materials are exported, mainly to the United States.

Concentration on the two chief money crops, namely sugar and tobacco, has made necessary large imports of foodstuffs. Cuba purchases

in the United States pork, beef, lard, butter, eggs, milk, to say nothing of flour, various cereals, and fresh and canned fruits. Local industries, under proper development, could supply some of these articles. However, Cuba produces cacao, yucca, henequen, honey, bananas, grapefruit, and pineapples; but in none of these cases is the island an important source of supply.

For many years the production of sugar and tobacco have been the main sources of income. Cane sugar can be grown successfully in many parts of the world. It requires rich soil and hot climate, but these conditions are met in so many places that the potential capacity for production far exceeds present demands. Moreover, beet sugar has become an important competitor of the cane product, and some countries which were formerly importers now largely supply their domestic needs. In fact, one of the great problems of the present, and it will probably remain for many years, is to take care of the excess of the producing lands.

This problem is as acute in Cuba as in any part of the world, largely because the island operates under a two-commercial crop system. Beside these, the fields have little to offer, under the existing organization, to international commerce. Normally, raw and refined sugar constitute about 70 per cent of the exports.

Conditions in Cuba are ideal for the production of cane. The climate is warm, there is plenty of moisture, and the soil is rich. No part of the island is far from the sea, and the plant seems to require such locations, among other conditions. The amount of land in the island suitable for sugar is several times as great as that which is now under cultivation. During the Spanish régime, the output rarely exceeded 1,000,000 tons a year, but in the settled times after the liberation, the industry expanded rapidly. In 1912-1913 production amounted to 2,400,000 tons; it rose to over 5,000,000 in 1924-1925. In 1930-1931 it was a little over 3,000,000 tons.

Some of the difficulties of the industry are revealed by the fact that prices have declined almost steadily from an annual average in the years 1921 to 1925 of 3.26 cents per pound to 1.11 cents a pound as an average for 1930-1931. In addition, the producers of beet sugar notably, protect domestic industries by tariffs, and in some cases encourage the export trade by means of bounties. Since all countries that are capable of producing either type of sugar are in quest of added incomes for their farmers, there is the temptation, in many parts of the world, to encourage production far beyond the actual needs of consumption.

In addition to sugar, raw and refined, and tobacco and its products,

Cuba exports pineapples, bananas, sponges, iron, copper, and manganese ores. Due to the fact that the United States is the chief market for most of these products, the trade of the island is mainly with this country. In 1929 and 1932 we took 76.6 per cent and 71.3 per cent respectively of the exports, and supplied 58.8 per cent and 54.2 per cent of the imports. The trade with Spain has now dropped to very small proportions.

Mexico

This country began the struggle for independence about 1810, when Hidalgo, "humble priest of Dolores and called by the Mexicans father of his country, rang out the tocsin from his parish church, crying to his followers, 'Viva Mexico.'" But a long struggle was ahead, which was not settled until 1822, when Mexico disposed of Iturbide, one of its own countrymen, who aspired to be emperor. Then followed the usual run of dictators. About 1857, Juarez inaugurated a new era of government, followed shortly by Porfirio Diaz, who ruled with an iron hand for over thirty years, but who governed so well that he laid the foundation for such prosperity as the republic enjoyed in subsequent years. He encouraged railway building and the opening of the resources, and he gave encouragement to foreigners to invest in such enterprises. The régime of Diaz was followed by a brief period of revolution, but the country was again established on a relatively stable basis, although under the new order the rulers have not been as eager for the aid of foreigners as under the old.

Mexico covers 760,000 square miles, an area about the size of the United States east of the Mississippi river. The population is estimated at between 14,000,000 and 15,000,000. This country contains a great diversity of resources which, under appropriate conditions, might be made to yield many times the present annual output. Throughout the years, Mexico has received very little aid from immigration, and since capital in the hands of the Mexicans accumulated very slowly, the main reliance for the development of the greater resources has been upon foreigners. As far as outsiders are concerned, the leading activities have been the development of petroleum, copper, lead, zinc, although considerable investments are in plantations of various types. In practically all cases, however, the chief reliance for labor is upon the Mexicans. Of the total population given above, probably less than 200,000 are foreigners. The native stock is composed of about 20 per cent whites, 40 per cent mixed races, and the remainder Indians.

Under the ægis of a protective tariff, Mexico is trying to build up domestic manufactures. Such enterprises include textiles (mostly cottons), shoes, cement, flour, sugar, furniture, tobacco products, and numerous small industries more or less of the hand labor or shop type. According to a census of manufactures in 1930 the country contained some 48,000 establishments, giving employment to about 320,000 persons, and adding a value by the process of manufacture amounting to \$249,000,000. For the most part, however, the significance of these enterprises is to increase the ability of the country to supply its own needs. In only a few instances do these products enter foreign commerce.

Mexico produces a number of minerals. Varying quantities of practically all of them seek a foreign market. This is the case with petroleum, graphite, antimony, arsenic, mercury, silver, copper, lead, and zinc. In fact, the minerals are the largest class of exports, amounting to from one-third to one-half of the total. In some cases, the exports of Mexico are more or less unique, as with henequen (sisal), ixtle, guayule (from which a kind of rubber is extracted), zacaton (a kind of fodder root), and vanilla, not to mention them all.

One of the most important of these is henequen, or sisal grass. It is chiefly a product of Yucatan, but it grows in some parts of central America, and to a limited extent in a few of the West Indies. In some of its uses it has competitors in hemp and jute, but the relative nearness of the source of supply to the American market, and the fact that the production and marketing has been largely organized by American capital, gives it special advantages in the United States, which is the chief consumer. Yucatan is also the source of another product which is marketed chiefly in the United States, namely, chicle, the basis for some kinds of chewing gum. Mexico is something of an exporter of winter vegetables, including tomatoes and peas. Garbanzos, or chick peas, are sold mainly in Spain and Cuba. Mexico is still an exporter of coffee and cacao, although in recent years these industries have suffered severely from competition from other sources; this is true also of vanilla, of which Mexico was at one time the chief source of supply. The imports are mainly a number of foodstuffs, fabrics of cotton, wool, and silk, iron and steel, chemicals, and machinery. The United States is normally the chief market for Mexican products, and the main source of her imports—65.3 per cent of the former and 63.8 per cent of the latter in 1932. The remainder of the trade is shared largely among

France, Germany and the United Kingdom, with other countries taking small portions. The total trade in 1929 was \$469,000,000 and in 1932, \$154,600,000.

Central America

The six main divisions of Central America cover upwards of 215,000 square miles with a population of about 6,000,000. The vast majority of these people exist on a simple plane of living, apparently without ambition to achieve anything better. Considerable portions of this region seem to be mineralized, but to what extent, no one knows. Some countries produce small quantities of gold and silver, but practically nothing of the base and alloy metals. The chief interest is agriculture. The principal products in which the exporter has an interest are coffee, bananas, and in some countries, cacao. British Honduras ship mahogany, chicle, coconuts, and copra; Nicaragua, bananas, coffee, mahogany, and at one time, dyewoods formed a part of the foreign shipments; Salvador exports coffee, henequen and balsams. Even in the best years the total trade of all the divisions rarely exceeds \$200,000,000, divided about equally between imports and exports. Because the United States is the chief importer of bananas and coffee, which as a rule, are the leading exports of most of these countries, America is the dominant factor in the trade. In 1932 about 39 per cent of the exports of Costa Rica were to the United States; likewise, 37 per cent of the shipments from Guatamala, 65 per cent of those of Nicaragua, and 67 per cent of Honduras were to this country. The United States is also the chief source of the imports. Germany is usually the second most important factor in this trade.

South America

Although all of this region, except Brazil, and the Guianas, was once a part of Spanish dominions, and all countries are imbued with practically the same traditions, when independence was achieved they failed to unite into a single nation. If anything, during the century or more in which they have been free nations, they have tended to drift further apart, and some, at times have engaged in war against others. The idea of a separate nationality has become firmly established, although many of the old common traditions remain.

The area of South America is about 7,400,000 square miles, somewhat less than half of which (3,286,000 square miles) is in Brazil, 1,079,000

square miles in Argentina, possibly 708,000 in Bolivia, and 524,000 in Peru.

General Conditions

As we have already seen in a former chapter, the economic capacity of the people of a nation is not only a matter of numbers, but of industrial effectiveness, their attitude toward work, and the implements and tools with which they labor. In all these respects many millions of people in Latin America do not measure up to the capacity of the workers in the great industrial nations. Conditions are probably the best in Argentina. This country has provided not only a number of universities—Buenos Aires, La Plata, Santa Fé, and Cordoba, which is one of the oldest institutions of learning in the Americas—but, in addition, specialized schools of commerce, vini-culture, fine arts, mines, and music. Most of the other countries have made ample provisions for higher education, and in some cases, for specialized training in branches which are related to the peculiar industrial opportunities of the country. A number of these nations have made education in the primary grades compulsory, but lack of appropriations, and in many instances the difficulties of the children in covering long distances to the schools, makes full compliance with these provisions impossible. In Colombia, illiteracy is said to amount to 60 per cent; it is also 60 per cent in Paraguay, and from 60 to 70 per cent in Brazil. It is high in most of the other countries.

The complex nature of the population imposes a serious problem upon the educators. Information on this subject is very unreliable, but it is estimated that 40 per cent of the population of Brazil is white, 30 per cent mestizo, 20 per cent Negro, and the remainder Indian. In the Andean countries the Indian element which is estimated at 60 per cent in Peru and Bolivia, predominates, while the white population amounts to about 10 per cent. Argentina and Brazil contain the largest European elements of recent origin, with Italians making up a large percentage.

Population

For obvious reasons, a count of the population in South America is impossible. Our figures are based on estimates. The estimated numbers in Brazil in 1931 were 41,478,000, which was a four-fold increase since 1872. Possibly more than half the population in South America is in this

country. Argentina contains 11,600,000, according to the estimate of 1931. In Chile the numbers are possibly 4,000,000.

In recent years these three countries have received large additions to their numbers through immigration. The movement began to reach rather large proportions after 1880. This condition was made possible by the expansion of farming and manufacturing which gave employment to foreigners, and to more regular means of transportation. Lack of employment opportunities has been one of the main causes for the avoidance of the regions in the north and northwest. As a rule, the larger countries have held out various inducements to immigration, such as temporary housing at low rates, and either free transportation, or conveyance for a small price of both immigrant and baggage. At one time, Brazil subsidized certain Italian steamship lines which transported immigrants.

Some of the enthusiasm for immigration has worn off since the beginning of troublesome times following the late war. But, in the prior period, large numbers of Europeans came to the southern countries either for permanent or temporary residence. The sources are rather widely distributed. An Argentina estimate of about 1911 gave the following enumeration covering the years from 1857 to 1911: Italians, 2,052,000; Spaniards, 1,132,000; French, 201,000; Russians, 115,800; Austrians, 74,000; Syrians 89,000; Germans, 50,700; English, 48,500. These elements are also represented in the immigration into Brazil, although in somewhat different proportions.

Foreign Investments

The economic development of South America has been dependent not only on immigration, but upon the use of foreign business talent and upon foreign capital. The greater part of the technical work required in the building of railroads and in the opening of mines has been contributed by the English, Americans, and Germans. Mining engineers have been busy, particularly since 1905, in surveying and developing resources of copper, silver, tin, and to some extent gold, in the Andean areas; and more recently, similar work has been done in exploiting the petroleum resources along the north coast of South America. Shortly after 1870, English and German enterprise developed the natural nitrate deposits of Chile, and English capital has been largely engaged in railroad-building. A number of manufacturing enterprises, of which meat-packing is an example, owe their origin to foreign initiative; and, of course, most of the cargoes that are floated

to and from the South American countries are carried in vessels of various nations. The rise of industry in all these regions has been coincidental with the introduction of foreign capital and enterprise.

Argentina has probably received the greatest benefits, although foreign business influence has been felt to some extent in all countries. But Brazil and Chile have also received notable assistance. In the latter country, the copper and nitrate resources have been the chief attraction, although certain amounts of capital have been put into manufacturing and commercial undertakings. All in all, the total foreign investment in Latin America has been estimated at over \$6,000,000,000.

The enormous investment in railways have rendered many regions accessible which were closed to all kinds of enterprise some fifty years ago. Port and warehouse improvements facilitate the movement of commerce. The liquid capital supplied in the banking business contributes to the same end. Many loans to national governments and to municipalities ultimately find their way into improvements of some description which are of assistance to commerce. Foreign business and engineering talent have not only contributed new ideas concerning industries but have also supplied the effective direction.

Resources

Like Africa, the continent of South America has a great belt of tropical forests, and much of this region, even to-day, has never been explored. But, unlike Africa, this continent contains a vast area in the temperate zone where activities appropriate to such areas may be carried on. The dry lands on the west coast of Peru and of north Chile, and in western Argentina, are nothing like the blighted country of the Sahara. Much of South America is provided with adequate rainfall, but of this, of course, the tropical belt has more than its share.

One of the greatest handicaps with which South America has had to contend is the lack of means of transportation. In some regions the rivers afford an adequate method of carriage. The Amazon extends almost across the continent, and the construction of a railroad around the falls of the Madeira has extended the limit of navigation into Bolivia. In the southeast, the La Plata system affords another rather extensive entrance into this portion of the continent, and the Orinoco performs a similar service in the north. Colombia has some advantage in transportation over the Magdalena, and Brazil has a number of navigable streams. But the west coast is poorly served by water communication; the rivers are short and swift and unfit for navigation.

This section is richly endowed with mineral, forest, and agricultural resources, but many thousands of square miles of the territory are inaccessible. Moreover, railroad-building in mountain areas is difficult and expensive. As a rule, the roads are short lines. In many instances, the gauges are different. Because of the difficulties of construction, the proposed Pan-American railroad is still many years in the future, although there now exist numerous short roads which may, in time, be combined into a system.

The level country of Argentina has been a great boon to the railroad-builder, and this section is now fairly well provided with rail transportation. Argentina contains upwards of 25,000 miles, the largest system of any country in South America. In Brazil there are about 21,000 miles, in Chile about 5,500 miles, and in Peru about 2,800 miles. All in all, South America contains about 60,000 miles of railroad. But on the whole, the mileage is highly localized in relatively small areas tributary to Buenos Aires, Santos, and Rio de Janeiro.

Argentina

The foreign trade of Argentina, Brazil, and Chile is upwards of 70 per cent of that of all South America. The trade of Argentine is not only much larger than that of the other countries, but, since 1900, it has increased at a more rapid rate—more than four-fold as compared with about three-fold for the other two countries. The foreign commerce of Argentina, Brazil, and Chile is given in the following table.

FOREIGN TRADE OF ARGENTINA, BRAZIL, AND CHILE; 1929 AND 1932

	1929		1932	
	IMPORTS	EXPORTS	IMPORTS	EXPORTS
	(IN \$1,000)			
Argentina	\$ 820,018	\$ 907,297	\$215,034	\$331,135
Brazil	416,626	455,923	108,131	180,618
Chile	195,078	276,623	16,890	27,709
Total for three countries	\$1,431,722	\$1,639,843	\$340,055	\$539,462
Total for South America	\$1,882,500	\$2,235,600	\$457,700	\$806,500

Argentina has the advantage over the other two countries in the greater diversity of its leading exports and in the wider market in which they are sold. But, in addition, the products of Argentina serve more imperative needs. Brazilian trade has suffered greatly over the last

thirty years in the decline in importance of her exports of rubber. Eminence as an exporter of that product has now passed to the Near East and Brazilian trade in this commodity has dropped to a minor position.

A description of South America in a geography of 1878 gives the following, which may be used as a contrast with the same region to-day: "South America has had a comparatively limited commerce. It is now rapidly increasing. . . . The tropical climate and frequent civil wars have tended to repress commercial enterprise, and the grandest system of navigable rivers on the globe is as yet but little used. There are no good roads, and only a few railways; most of these are short, and extend from Buenos Aires, Rio Janeiro, Santiago, and Lima."⁵

With the development of the country there was an increasing concentration of population in Buenos Aires, the chief industrial and commercial center. The living conditions in this city about 1870 were described as follows: "Though this terrible pestilence (yellow fever) is said to have been imported from Brazil, its rapid spread in the city can clearly be ascribed to temporary causes which even the unrivalled salubrity of the climate was insufficient to neutralize. In the absence of any artificial drainage the cleanliness of the city had depended on its occasional scouring by the heavy rains, whilst an ever increasing number of cesspools have been accumulating filth beneath the houses; up to the year 1870 the consumption of water, beyond the amount of rainwater accumulated in tanks in the houses of the wealthy, was limited by the cost of cartage from the river."⁶

In 1869 the city of Buenos Aires had a population of about 178,000. The numbers are now about 2,195,000. This rapid growth is the product of the numerous industrial forces which have been lifting the country from one which was known to the outside world chiefly because of its pastoral industries to one of the leaders in the production of surplus agricultural commodities. More than 18 per cent of the total population of the country is now concentrated in the capital city. The growth of population and commerce have made necessary great expenditures for city betterment. Up to 1915 about \$70,000,000 were spent on port and harbor improvement, and other vast sums were invested in water-works, drainage and various public utilities. Most of this was financed on funds borrowed from abroad, and materials and supplies of various descriptions were imported for such works.

⁵ *Harper's School Geography* (1878) p. 78.

⁶ *Encyclopædia Britannica*, II, p. 494.

The chief exports of Argentina at this time were hides and wool, and the country was pictured as a vast range upon which cattle were raised not for their meat, but for hides. Times have changed. Neither wool nor hides is a ranking export to-day. If anything, they are more in the nature of by-products than of prime commodities for exchange. The export of cereals now occupies the ranking position, while meat products—chiefly frozen and chilled beef, with minor quantities of mutton—rank second. Various other commodities, which have appeared on the export list since 1878, now add greatly to the value of Argentina's trade. In this class are linseed, quebracho extract and logs—used as tanning materials—cotton and butter. Quebracho is a unique product of certain sections of Argentina, Paraguay, and southern Brazil. Thousands of tons of the extract are produced every year and exported to the United States and other countries for tanning purposes. The wood is extremely hard. In fact, the word means "ax-breaker." And it possesses another important quality, namely, the power to resist the attack of insects and the powers of decay. Railway lines have been extended into the forests, and steamers make their way up the rivers emptying into the Paraná, to receive the wood or the extract as it comes out of the forests. The development of this industry is one of many illustrations of the more exacting demands of modern industry for specialized products—an illustration also, of the character of the enterprise which scours the world for such raw materials.

The cereals are the most important export. In 1932 Argentina shipped 126,000,000 bushels of wheat, giving her a place among the leading exporters of that commodity; she sent abroad 277,000,000 bushels of corn, which gives her first rank as an exporter of that product. In this respect, the Argentina grain industry and trade presents an interesting contrast with that of the United States. This country, which is the largest producer in the world, exports less than one per cent of her corn crop while shipments from Argentina are frequently in excess of 50 per cent.

Although Argentina has some mineral resources, production is practically confined to petroleum, and even of this, the annual output does not satisfy domestic needs. In the field of manufactures the leading industries are meat-packing, flour-milling, creameries, and the production of sugar and quebracho extract. The products of all these industries are shipped in foreign trade. Various minor industries, such as the manufacture of boots and shoes, textiles, and machinery, serve domestic needs chiefly.

Until about 1880, the livestock industry was represented mainly by the large herds of wild cattle which roamed the pampas, and which were hunted for tallow and hides—a condition which prevailed at one time in Texas, and even more recently in Colombia and Venezuela. The growth of the packing business depended on the introduction of transportation facilities and upon the development of satisfactory breeds of livestock. But growth was much more dependent on the discovery of methods of refrigeration. The capacity of the country for the production of livestock far exceeds the possible domestic demands for meat. The introduction of methods of artificial refrigeration made the export business possible. Some trade of this description between the United States and England began about 1874, but methods were crude, and the prejudice against refrigerated meat retarded expansion. Some early experiments in the trans-Atlantic meat business involved the freezing, rather than the chilling, of the products. Meat was frozen hard by using a solution of ice and salt, and in this state was shipped to the Smithfield market. Later experiments proved that chilling was a satisfactory method of preservation. The growing success of the new method gave Argentina its first real opportunity for development. The packing plants are now owned and operated largely by American and British capital.

Some domestic, and even a little export, trade existed before the introduction of refrigeration. For years some Latin-American countries manufactured a salted and dried product known as “jerked beef,” a commodity which even now plays a part in the trade.

The imports into Argentina are mainly manufactured articles which include cotton and woolen textiles, jute bags and sacking, pine lumber, various products of iron and steel, machinery, including harvesters, binders, and headers, and automobiles.

Since the United Kingdom needs practically everything Argentina produces, more than 30 per cent of the export business is usually with that country. The United States rarely takes as much as ten per cent of Argentina's shipments. Our receipts are mainly hides and skins, wool, linseed, and quebracho logs and extract. Britain is also the chief factor in the Argentinean import trade, with the United States and Germany in the second or third place.

Brazil

Coffee has been for years one of the leading exports of Brazil. About 1718, the Dutch brought the seed to Surinam, and from this place cul-

tivation spread to some of the West Indies, and thence to Central America and Brazil. But it is only in recent times that the Brazilian industry has been able to dominate the coffee trade of the world. For a decade or more, production has been in such excess of world consumption that the Brazilian government has been driven to adopt measures to regulate the market. Nor have these met with marked success. In 1931-1932 a plan was adopted to destroy a part of the surplus. Since coffee dominates the export trade, the plight of the industry has not only affected planters but the government itself, which has undertaken to finance systems of control.

Brazil produces only small quantities of wheat (4,900,000 bushels in 1930-1931), but the output of corn is sometimes about equal to that of Argentina. Both countries produce considerable quantities of sugar and cotton, but mainly for domestic consumption. In recent years, Brazil has developed a rather important fruit industry. Oranges and bananas are cultivated on a large scale in São Paulo, and citrous fruits in the state of Rio de Janeiro.

Brazil is one of the few countries in South America that has reserves of iron and coal; but only small quantities of these minerals are mined. Manganese ore, produced mainly in the state of Minas Geraes, is exported chiefly to the United States. This country is also a producer of precious and industrial diamonds, of mica, of zirconium sand, and of small quantities of gold and silver, all of which are exportable commodities. Cacao is an important product, the exports frequently exceeding 140,000,000 pounds annually. The forests supply to the export trade nuts, gums, and waxes, notably carnauba wax. Herva matte (Brazilian tea) is sold to other South American countries, Argentina being the chief importer. Rubber is still an export, although the quantities are very small compared with shipments from Malaya. Coffee is the mainstay of the export trade, frequently amounting to more than 70 per cent of the total foreign shipments.

As a rule, more than 40 per cent of Brazilian exports are destined for the United States. This country is the largest consumer of Brazilian coffee, and is also an importer of carnauba wax, industrial diamonds, hides and skins, Brazil nuts, and manganese ore. The United States is also the principal source of the imports into Brazil, amounting from 20 to 30 per cent of the total, but the United Kingdom, Germany and Argentina each contribute 10 per cent or more.

Chile

Unlike the two countries we have just discussed, Chile relies on the mineral industries to support her export trade. Among her resources are natural nitrates, copper, coal, iron ore, gold, silver, borax, and a few others of minor importance.

Copper has been mined in this country for several centuries, but the industry has suffered various fates. At one time, Chile furnished upwards of one-third the world supply, but she lost her relative position with the development of the copper mines in the United States. Since 1900, due to the active interest of some American and European capitalists, the Chilean industry has been restored to high rank. In 1931 her position was second to that of the United States with a mine output of 224,000 tons. But the growing copper industry in Canada and South Africa may deprive Chile of some of this eminence.

Chile is the only country in the world which contains natural nitrates. The prosperity of this industry, also, has been threatened in recent years because of the development of processes which make use of atmospheric nitrogen. In the United States, and in several countries of Europe, are large industries of this type, which not only supply a portion of the domestic needs, but upon occasions have a surplus for export. The Chilean nitrate beds extend about 450 miles from the Camerones river in the north to Caldera in the south. The deposits exist in strata on or near the surface and, as a result, elaborate mining apparatus is not necessary. This material enters into a number of uses, such as the manufacture of explosives, fertilizers, general chemicals, and nitric and sulphuric acid. Hitherto a national tax on the industry has been a main source of governmental revenue.

The earliest development of this industry dates back to about 1825, but exports did not begin to reach large proportions until about 1870 with the growing needs for production of fertilizers and explosives. Other uses subsequently increased the demand. Iodine salts, which are obtained as a by-product in the refining of the nitrates, contribute something to Chilean exports.

Chile possesses considerable resources of iron and coal. The former is mined mainly for export. The United States is the largest consumer. Except for wool, hides and skins, and relatively small quantities of meats, the agricultural industries supply little or nothing to foreign trade. Under normal conditions, the nitrates compose upwards of 40 per cent of the foreign shipments, and the nitrates and copper together

about 80 per cent. Chile trades principally with the United States, the United Kingdom, and Germany, all of which are large importers of the products named above.

Other South American Countries

Although the other nations of South America have been trading abroad for many years, their economic development has been much slower than that of the three countries discussed above. Venezuela, Colombia, Peru, and Uruguay are the most important in this minor group; but, in most instances, their foreign shipments do not exceed \$150,000,000 a year. Not infrequently the export trade is dominated by one or two products. This is the case with Venezuela where crude petroleum is between 70 and 80 per cent of the total, of Colombia where coffee is usually more than 50 per cent of the total, and of Uruguay with meat products often amounting to more than 70 per cent of the exports. In some cases the products are more or less unique. Colombia for example is the principal world source of emeralds, and one of the main producers of platinum; Peruvian cotton, alpaca hair, and vanadium are in this class with respect to Peru; Bolivia is one of the main sources of bismuth and tin; Ecuador was the original home of the Panama hat, manufactured by a slow hand process from toquilla straw; Ecuador and Colombia are the sources of tagua nuts (vegetable ivory), used in the manufacture of buttons and various ornamental products; Venezuela is an exporter of the tonka bean, the fruit of the sarrapia tree, used in preparing chewing tobacco and in the making of perfumes; a few of the northern countries export balata, a rubber-like product. Nature in South America has produced a great number of commodities of this description which are indigenous in various regions, and for which some commercial use has been found.

In addition to petroleum, which is a relatively recent industry, Venezuela ships coffee, cacao beans, hides and skins, balata, asphalt, divi-divi, and tonka. Colombia exports bananas, coffee, balata, tagua nuts, hides, platinum, emeralds, and petroleum. Shipments from Peru include copper, lead, zinc, vanadium, petroleum, cotton, hides, sugar, and alpaca; from Bolivia mainly ores and concentrates such as copper, lead, zinc, tin, antimony, and bismuth; also rubber, quinine bark, coca leaves, and hides and skins; and from Ecuador, coffee, cacao, balsa woods, hats, rubber and petroleum. A number of the countries are exporters of gold and silver, but the quantities are usually small.

The imports into these various regions are composed mainly of

manufactured goods, of which the textiles are the most important, but in some cases, particularly with those countries which are engaging extensively in mining, iron and steel, machinery and chemicals, form a rather large part of the import trade. Except where foreign enterprise has taken a part in the development of some favored industries, the work is still carried on by primitive methods. This is notably the case with much of the farming; and in many cases, as with tagua nuts and tonka, the native merely harvests a product which nature has supplied, and thereby supplies himself with a little income. South America still contains vast areas which have never been touched by the hand of civilized man, and other vast areas where the natives support themselves entirely by their own labor without contact with the outside world.

West Indies

For many years after the first settlement by Europeans, these islands were regarded as important chiefly as producers of sugar. That industry has seen many ups and downs since early colonial days. In recent years, so far as their resources permit, the islands have adjusted themselves to the newer demands of commerce. Agriculture is the principal industry. The most important crops are sugar, bananas, cacao, coconuts, cotton, coffee, limes, and spices. Mining is restricted to the large resources of petroleum and natural asphalt of Trinidad. Jamaica is one of the chief producers of spices; Trinidad and Grenada contribute considerable amounts. These exports include pimento, ginger, nutmeg and mace. Some islands produce citrous fruits and vegetables for export to Canada and England. As with all non-industrialized regions, the shop or home industries are important in the supply of the local trade; but the island imports textile fabrics, a variety of foodstuffs and fuel oil, among other commodities.

The Balance of Trade

The export trade serves the purpose not only of enabling the people of the countries to pay for their purchases abroad, but of discharging debts to foreigners for various kinds of services, such as the carriage of ocean freight, insurance of cargoes, payment of interest on borrowed funds, and partial repayment of the principal, to name only a few of the invisible items. Practically all the Latin-American countries are debtors. Governments have borrowed large sums for public and other works, and foreign capitalists have invested great sums in certain types of

enterprises. Moreover, the Latin-American countries have only insignificant amounts of the invisible items to offset a portion of their debts. The result is that their physical exports must exceed their imports. In 1926 the excess of exports over imports was estimated at \$320,000,000. In the five-year period from 1926 to 1930 Argentina's foreign shipments exceeded imports annually by more than \$60,000,000; in the case of Brazil the excess was nearly \$50,000,000, and with Chile about \$56,000,000. A similar condition prevails with most of the other countries.

To a large extent, the annual discharge of these obligations rests on a rather uncertain basis, because in the case of most of the nations the prosperity of the export trade depends on one or two commodities. Brazil is a notable example. The trouble with coffee has been one of the causes of domestic financial disturbances.

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PART III

COMMODITIES OF COMMERCE

CHAPTER XVII

FOREIGN TRADE IN MANUFACTURED GOODS

Manufactured goods compose one of the most important groups of commodities that move in international commerce. Among the greatest constituents of this class are textiles and clothing, the varied products of iron and steel, machinery, including electrical devices of many kinds, chemicals, and fabricated foodstuffs. We have already indicated that manufactures are the great feature of the export commerce of the industrialized countries. In 1931, 47.1 per cent of the exports of the United States were in this class, and if we added manufactured foodstuffs, the total would be 57.4 per cent. The amount is sometimes more, sometimes less, but it rarely departs to any marked degree from this figure. The same condition prevails in the export trade of Britain, Germany, France, Belgium, and Switzerland, where machine production is the rule. These areas have been favored by certain economic advantages such as ability to tap large sources of raw materials, cheap sources of power, adequate transportation, abundant supplies of domestic capital, and native or acquired skill of laborers. In short, they possess the various elements which are set down in the textbooks as factors in the localization of industries.

The Invisible Factors of Economic Growth

This statement, however, does not include elements which sometimes escape attention. One could find many localities in the world where labor is willing and able, and where resources are ample, but where nothing but hand labor prevails. Whether a people will develop a machine economy in the absence of outside aid depends on other factors than those involved in physical surroundings, or prospective markets. Habits, traditions, legal arrangements, systems of social control, and sometimes religious institutions, determine the course of economic life. But once expansion begins to move strongly in a given direction, momentum carries it on.

Industries in the countries bordering on the North Atlantic have been characterized by a long list of important inventions which have

laid the basis for the modern factory system, and discoveries go on with even greater results to-day than in time past. After certain preliminary steps—the inventions of Arkwright, Crompton, Cartwright, and Hargreaves in the textile field, of James Watt in power, of George Stephenson and others in land traction, and of Abraham Darby and James Neilson in the manufactures of iron—the basic trend of modern economic growth had been established. It happened that most of these investors were Englishmen, and that England was the earliest home of mechanical production. But it would be difficult to prove that inventive genius is the property of any nation or race.

The accidents of invention are sometimes forces of great moment in giving character to a nation's industries. Legislation may emphasize the results which discovery has begun. The student is probably aware of the careful effort of the British government some hundred and fifty years ago, to prevent English inventions from getting into the hands of foreigners. Even now, most industries guard their innermost secrets lest competitors at home or abroad may know their key methods. Moreover, patent laws, and the conditions of registering patents abroad, sometimes have an effect on the character of industrial undertakings.

Further, the momentum of organization and technical improvement often map a new line of expansion. One invention suggests another or at least indicates related uses. The application of machinery to one process frequently is the signal for its use in another. The steam engine, which was originally not much more than a device for pumping water from mines, was soon extended to factory-power purposes and to the development of locomotive traction. The sewing machine, originally designed as a contrivance to aid the busy housewife, was promptly applied to factory production of boots and shoes. These are only a few illustrations and could be multiplied in every field of industry.

The stream of invention flows much more rapidly in some countries than in others, and therefore develops marked contrasts in the mechanical output even of industrialized countries. Thus the mere fact that a country is in the machine stage does not prohibit trade in similar classes of articles made in other industrialized countries. In many cases, the products of such machines are not competitive. And this is notably the case with the long list of specialty goods.

Localization of Manufactures

Once highly localized in a few regions of the earth, mechanical production during the last seventy years has been spreading to other

countries. At times this change has been effected by the introduction of foreign enterprise and capital, and by the import of machinery from countries which specialize in such production. Once manufacturing has begun in a country, the inevitable happens; namely, the national legislature imposes tariffs on competing foreign goods. In the case of smaller countries, the chief significance of this type of development is to change to some extent the character of the imports. Home manufacture diminishes the demand for certain classes of foreign goods, but it is usually a reason for an increased import of iron and steel and machinery and for the development of local machine, or repair, shops. But, by the nature of the case, the production of machinery is an enterprise in which only a few countries can engage.

Thus, this type of industry has become highly localized for several reasons: First, such manufacture requires a considerable variety of technical skills, usually assisted by a great deal of industrial research. Then, such industries must be located near others which produce iron and steel in great quantities; and finally, successful production of mechanical devices requires a large market for finished products. Practically all the heavy industries require an enormous investment per establishment and capitalists will not venture in this line of production unless a large market is available.

Perhaps it ought to be added that a highly developed machine industry is the key to mechanical progress. The rapid growth of any new industry presupposes the existence of mechanical trades which can promptly administer to its wants. Possibly this explains one of the causes for the rapid development of the automobile; the machine trades were ready to render a variety of services to the new industry. But the same condition applies to every mechanical discovery. If such facilities do not exist, industries labor under severe handicaps.

Localization of Manufactures in the United States

Even within the industrialized nations, manufacture is highly localized, which signifies that domestic trade also is based on differences of products. A few examples from industrial conditions in this country will illustrate this point. In America manufactures are largely concentrated in the Central Atlantic division, including mainly New York, Pennsylvania, New Jersey and Delaware; and in the Mid-West, including chiefly Ohio, Illinois, Indiana, Kentucky, and Michigan. In 1930 upwards of 65.7 per cent of the manufacturing was done in these areas. This is shown in greater detail on p. 280.

MODERN WORLD TRADE

CENTRAL ATLANTIC DIVISION

32.31 per cent of U. S. manufactures
23.3 per cent of the population
4 per cent of the area.

THE MIDWEST

33.45 per cent of U. S. manufactures
26.2 per cent of the population
12 per cent of the area.

Production is even more highly concentrated than these tables indicate. In the eastern section, the greatest volume of goods are produced within a narrow strip, perhaps no more than one hundred miles wide, extending from Lowell, Massachusetts, to Wilmington, Delaware. In the Mid-West, the area from Buffalo to Chicago, along the Great Lakes, and along the upper Ohio river are the regions of greatest density of manufactures. Of course, mechanical production of some kind is a feature of practically all the smaller cities scattered throughout the country, but as may be deduced from the tables given in the text, this is of relatively small volume compared with the remainder of the country.

The condition in the Southern states, which comprises one of the largest areas in the United States is shown in the table.

THE SOUTHEAST AND GULF SOUTHWEST

13.58 per cent of U. S. manufactures
28.3 per cent of the population
29.0 per cent of the area.

Here, also, conditions are by no means uniform. The manufactures of iron and steel and of cotton textiles are localized in a few regions in the Southeast, and petroleum refining in the Gulf Southwest. In short, divisions of industry have grown up, sometimes because of peculiarities of natural conditions, sometimes largely under the influence of man-made factors, which cause a great difference in products, and thereby lay the basis for much of our domestic trade. The South and Mid-West are more largely engaged in producing raw materials, while the Northeast and Great Lakes areas are primarily manufacturing.

Localization of Industry in Other Parts of the World

Similar conditions prevail in Europe. The manufacturing areas are mainly in the western portion of the continent; in the East the activities are chiefly agricultural. But, as with the United States, manufactures are not evenly distributed even in the industrialized countries. The forces of localization have been at work bestowing upon each section certain peculiarities of production. Among the most important of these are ample transportation, access to large quantities of raw materials—particularly power resources, metals, and textile fibers—and available markets.

In the United Kingdom, localization is dominated largely by conditions of supply of raw materials and by markets, although custom plays a part in maintaining industries in certain areas in which they have long been established. Upwards of "thirty-six per cent of the pig iron producing plants and 65 per cent of the ingot and casting capacity are in the 11 per cent of area where is to be found the great concentration of population. The average haul by rail in 1921-1924 was forty-four miles for iron ore, forty-eight miles for pig iron, and forty-one miles for iron and steel ingots. Thus the chief raw materials for engineering are convenient to fabricating plants."¹

On the other hand, the engineering trades, "with greater diversity of products, (are) widely distributed, the location of the different sections having been originally determined by domestic markets."² In 1921 about one-third the production of agricultural implements was in Lincolnshire, convenient to the principal farming communities. About 60 per cent of the establishments engaged in producing textile machinery were in Lancashire and about 23 per cent in Yorkshire. About "one-third of all branches of engineering in 1921 was located in the twelve large ports." The manufacture of cottons was largely concentrated in Lancashire and of woolens and worsteds in Yorkshire; and the production of electrical wares was largely carried on in three centers, namely, Greater London, Lancashire, and Warwickshire.

It should be observed, however, that industries are constantly shifting their position, under the influence of new conditions. In England, for some time, there has been a tendency for manufactures to move southward. The main factors involved are: local taxation in these areas

¹ Hugh Butler, "The United Kingdom," *Trade Promotion Series No. 94* (U. S. Department of Commerce Publication), p. 73.

² *Ibid.*, p. 73.

has been lighter because of the smaller burden of unemployment; second, industry in the newer areas is less subject to some of the "hard-and-fast trade customs and restrictions which have become more or less set in the older industrial districts"; nearness to the London market has attracted certain trades; and finally, location on the coal fields has become a factor of diminishing importance with the development of electric power.³

On the continent, as with England, nearness to sources of coal and iron, and facilities for importing other raw materials, have been dominant factors in localizing industries. The most important areas include northern and northeastern France, contiguous areas in Belgium, and western Germany. Local conditions, in which tradition often plays a part, have been responsible for the building up of other industrial centers in these countries, as well as in other parts of Europe.

The only country in Asia with a considerable factory industry is Japan. Most of the enterprise, at least in the modern form, dates from about the time of the war with China (1895). Subsequently, such industries as iron and steel, ship-building, machine-spinning and weaving, and the manufacture of flour made an important start. A second period "of rapid expansion came after the Russo-Japanese war of 1904-1905, when electric enterprises received their first important stimulus. . . . With the opening of the war in Europe, Japanese industries underwent enormous expansion."⁴

In 1930, Japanese factories employed about 1,683,000 operatives and produced goods worth about \$3,576,000,000. With the rise of factory industry, Japan has become an important exporting nation.

With the exception of cotton and jute textiles, the industries of India can hardly be said to have reached the factory stage. In 1925 the following was given in characterization of the Indian labor situation: "The industrial labor employed in factories run on modern lines—and the total number of such laborers in the whole of India does not exceed 1,500,000—is mostly illiterate, irregular, and of a migratory character. It is unorganized to a large extent, and inefficient, and the laborer has no heart in his work. Taking factory labor in cities like Bombay and Ahmedabad, the seats of industry, we find that the mill hands are for the most part agriculturalists, who migrate to Bombay to supplement their earnings in the seasons when they are not required in the field."⁵

³ *Trade Promotion Series No. 94, op. cit.*, p. 73.

⁴ Moulton and Ko, *op. cit.*, pp. 99-100.

⁵ P. A. Wadia and J. N. Joshi, *The Wealth of India* (Macmillan and Co., Ltd., London, 1925), p. 331.

It is evident that it is difficult to build a factory system on labor of this character.

Most of the machine industry in India is of recent date. The cotton textiles are probably the oldest, dating back to about 1850. The manufacture of materials from jute is of later origin and even to-day, the iron and steel industry is in its infancy. The most important manufacturing areas are Calcutta and Bombay, the former being noted chiefly for the products of jute. The Indian shipments of gunny bags and cloth is usually the most important manufactured export.

Manufactured Goods in International Commerce

Exports of the industrial nations are composed of a great variety of goods, not usually revealed by the classes into which such commodities are divided. The most important groups are iron and steel in various forms, including pig, bars, construction steel, tools and machinery; perhaps we should include in this group electrical apparatus and supplies, including electric machinery. The textiles are also among the most important export classes, cottons composing the larger portion, but with silks, woolens, rayon, clothing, and other kinds of fabrics adding large amounts to the total. We should include also chemicals of many kinds; and in the case of some countries, automobiles, and petroleum and its products, rank high in the list of exports.

Iron, Steel, Machinery

In 1930 the manufactures of iron and steel, including machinery, were the most important commodities which entered international trade. The total value was in excess of \$2,000,000,000, of which amount the value of machinery was over \$800,000,000. This is the contribution of the United States, Britain, Germany, and France to the outside world's supply of such materials. In many cases, these represent necessary imports. The receiving nations have no facilities for such manufactures and must either import or go without. This total given above includes over \$300,000,000 worth of electrical machinery and supplies. A few other nations are exporters, but in small quantities compared with the countries named above.

The exports of these products are about as widely distributed as those of textiles and foodstuffs. Practically every country in Latin America is an importer of iron, steel, machinery, and electric wares. In 1929 the foreign bill of Argentina was the largest of the countries in this division, amounting to more than \$191,300,000; Brazil was the second most

important with \$104,300,000, and Chile third, with \$46,400,000. The imports included wire, cables, bars, plates, nails, structural shapes, pipes, fittings, columns, armatures, not to mention them all. In countries with a large agricultural interest, farm machinery is an important constituent in this class of imports. The west coast countries are importers of mining machinery and equipment, in addition to the customary lines of iron and steel products. Venezuela, Colombia, and Mexico are considerable consumers of oil-well machinery and supplies. Thus it often happens, that the nature of the leading enterprises determines the character of the import, although the simple forms of the metal, such as bars and plates, are of almost universal consumption.

In Asia, Japan is the largest importer. Her bill in 1929 was \$129,400,000 including about \$55,800,000 for machinery and parts and \$13,100,000 for pig iron. Large shipments were made to India and China. In Africa, the chief importers are Egypt, Algeria, and the Union of South Africa.

For various reasons, such as price considerations, and the more or less specialized or unique character of the machinery, even the industrialized countries are large importers. In 1929 the United Kingdom paid \$93,200,000 for imported machinery, Germany's bill was \$41,500,000, and that of France \$111,700,000. Netherlands, Italy, Czechoslovakia, Poland, and Switzerland are important markets for foreign wares of this kind, and this says nothing of large quantities of various types of iron and steel which are brought in by all these countries. Even the diversified metal industries of the United States do not exempt this country from import. Thus our receipts include not only various kinds of cutlery, but cruder stuffs, such as several varieties of steel-mill products, semi-manufactures, and ferro-alloys.

Textiles

The textiles constitute the second most important group of commodities which moves in international trade. In 1930 the exports of the five leading nations was upwards of \$1,600,000,000. Of this amount cottons constituted about one-half, woollens about one-third, and the balance was made up of linens, silks, rayon fabrics, and clothing. The United Kingdom, France, Germany, and Japan are the most important exporters, but half a dozen or more other countries supply textiles to the external trade. Italy, for example, ships considerable quantities of fabrics of cotton, wool, silk, and rayon, to say nothing of yarns of some

of these materials. Switzerland, also, ships yarn and thread of cotton, wool and rayon, in addition to silk ribbons and piece goods, and cotton and woollen cloth. Netherlands, Belgium, Poland, and Czechoslovakia are also contenders for a small share of the international trade.

In Asia, Japan is rapidly becoming a great factor in the markets of the Far and Near East, and, to some extent, in those of South America and Africa. India and China export small quantities of cottons, and of course the former country is the chief world exporter of the manufactures of jute. To some extent the exports of these various countries do not compete, but, as a rule, the shipments are of more or less staple articles which, if they do not displace the products of other countries directly, enter the markets as substitutes for goods which have already become established. The United States is also a party to this competition. However, our chief markets are on this side of the Atlantic, in Canada, in Cuba, and in various countries of Central and South America.

The market for textile fabrics is practically world wide. It would be a rare occurrence to discover in the import list of any country the absence of some commodities of this description. But the largest markets are in Asia and Oceania. In 1929 the imports of cottons into India amounted to \$223,100,000; into China, to \$106,300,000; into Netherland India, to \$70,900,000; into British Malaya, to \$21,000,000; and into Australia, to \$34,500,000.

Chemicals

The hundreds of items in this list constitute a third major group of international commodities. Of necessity, the production of varied chemicals is an enterprise in which only the highly developed countries can engage. In addition to the requirements for raw materials, and large outlays of capital, there is the need of the spirit of discovery. The life blood of the modern chemical industry is research, and the large companies spend millions of dollars annually for this purpose. A recent study estimated that in the United States alone chemical research expenditures amounted to \$105,000,000 a year. But particularly in this line of industry, with attempts at new discoveries, you cast your lot with an uncertainty and hope that in the end the profits will more than offset the outlay. At any rate, only large scale units can indulge in this kind of enterprise. Hence, if companies in the poorer countries engage in chemical manufactures, they must confine themselves to a few

simple products and leave the more complex articles to others. Research signifies that the industry is constantly turning out new commodities and is discovering cheaper ways of producing the older ones.

In normal times the exports of chemicals and allied products from Germany, United Kingdom, the United States, and France often exceed \$700,000,000 annually. In addition, Switzerland, Netherlands, Belgium, Czechoslovakia, and Italy are the seats of sizable chemical industries which supply varied products to international trade. In 1929 Germany alone exported \$327,400,000 of such materials, and the United States \$152,000,000 worth.

Manufactured Foodstuffs

Industrialization has created new problems of feeding for the millions of persons who have been deprived of an opportunity of producing their own foodstuffs. The matter is particularly serious with industrial nations living within relatively small boundaries, such as Britain, Germany, Belgium, and France. It is not a serious problem in the United States, although in this country, also, the movement over the last three or four decades has been strongly in the direction of urban communities. But here, the enormous land area under one political jurisdiction spares our people some of the worries of their co-workers in Europe.

In a country like Britain, with an urban concentration amounting to about 79 per cent of the total, the question of food is one of the first magnitude. It is also something of a problem in Germany where upwards of 64 per cent of the people live in urban communities, although the land area available for cultivation is much larger in this country than in Britain. The industrialized nations of Europe are the most important world markets for foodstuffs. This comes to them sometimes in the form of unmanufactured materials such as various cereals, fresh fruits and vegetables, but larger quantities of food imports have been partly or completely processed before delivery to the consuming country. Such goods include wheat flour, of which the United States, Canada, and Australia are the largest exporters; beef and its products, mainly from Argentina, Uruguay and Australia; and pork and its products exported chiefly from the United States, Denmark, and Netherlands. But the shipments include also canned vegetables, fruit, milk, butter, cheese, fresh eggs and egg powder, and other products of minor importance.

Other Commodities

We have referred hitherto to only the major groups of goods which enter international trade. But hundreds, perhaps thousands, of others have a place in the foreign shipments. The official list of the United States groups exports into eleven classes with upwards of one hundred subdivisions. But under each of these is again listed hundreds of commodities. Other leading countries could display as pretentious a list as that of the United States, but in many respects different from ours, because each nation produces specialties which are peculiar to its system of manufacture. Herein are differences enough to lay a broad foundation for international trade.

Trade Among the Industrialized Nations

A high degree of industrialization does not prevent trade among countries which are on this stage. Differences in the character of specific commodities, and price differences, even in the case of countries which levy protective duties, are among the reasons for such movements of trade. In addition, the manufacturers of some countries are better equipped for pursuit of some branches of given industries than for others, and consequently, they import materials as partly finished goods. In some cases, technical improvements in industrial processes, or industrial research, have yielded products which give one nation a real advantage over another in some classes of products. In addition, regional specialization prevails in certain classes of goods to a greater extent in Europe than in the United States, and this is an occasion for the exchange of products.

Germany, for example, is a large importer of cotton, wool, and rayon yarns, and of the manufactures of finished fabrics. She also imports iron and steel (\$81,800,000 in 1929 and \$25,700,000 in 1932), electric and other machinery, automobiles, and chemicals (\$76,400,000 in 1929 and \$34,400,000 in 1932). France imports heavy iron and steel, machinery, chemicals, drugs, dye stuffs, and pharmaceutical products, among others. The United Kingdom is a large importer of iron and steel (\$120,100,000 in 1929 and \$30,300,000 in 1932), of cutlery, hardware, of instruments of various descriptions, of machinery (\$87,200,000 and \$36,200,000 in 1929 and 1932 respectively), of automobiles, and of drugs and chemicals. And, of course, all these countries trade with each other in raw and partly finished products of many descriptions.

In this connection it has been said of the British iron and steel industry that notwithstanding the fact that "Great Britain is a producer of every kind of steel, a very considerable tonnage of steel is imported regularly from the Continent, the bulk of which is in semifinished products, such as billets and sheet bars, which can be produced more cheaply on the Continent because of low labor costs. These semifinished products are used principally for the production of the sheets which are exported."⁶ These imports are brought from a half dozen or more countries, including Sweden, Netherlands, Belgium, France, Germany, and Luxemburg, and the United States contributes something to the supply.

With regard to machinery the following is a partial explanation of the international trade in such products: "As far as the international machinery trade is concerned, it is recognized that in some countries wages are very high and in others very low, and it is conceivable that low-wages countries can produce special machinery relatively cheap, particularly in those instances where important development charges must be absorbed. In contrast, owing to the efficiency of operation, high-wage countries can usually make a favorable showing in those types of machinery where mass production can be employed and also in the production of those types of machinery that are used for mass production."⁷ Herein, also, is an explanation of the trade not only among European countries, but among nations on a high, and on a relatively low stage of development, where the latter are trying to build up manufactures of certain types, such as the textiles and boots and shoes. But the statement also indicates why such countries cannot become the manufacturers of machinery for export.

In the case of chemicals, the enormous variety of products often creates essential differences in the kind of materials produced by each country, and in consequence, this condition is a basis for trade. But it is also the case that countries with a developed chemical industry import certain kinds of materials for conversion into others, either for domestic consumption or for export. Notwithstanding the high status of the British chemical industry, this country takes from the United States a long list of materials, such as benzol, proprietary medicines, and allied products, carbon black, zinc oxide, and borax. The United States also exports to Britain large quantities of naval stores, and considerable amounts of sulphur, natural essential oils, disinfectants, in-

⁶ Hugh Butler, "The United Kingdom," *Trade Promotion Series*, No. 94, p. 177.

⁷ *Ibid.*, p. 220.

secticides, white lead, and many others. Similar basic conditions prevail in the chemical trade of other countries.

Thus, no nation is completely sustaining in many of the classes of manufactured goods; there is much trading in such commodities even among the highly industrialized nations. In many instances, grade for grade, there are considerable differences in quality. In this manner, and for such goods, the imported articles do not compete seriously with domestic products, except where they may serve as substitutes.

With respect to competition of the industrial nations in the markets of the world, commercial rivalry is an important factor in the progress, or in some cases, the regress, of trade. But here, also, the struggle is more often apparent than real. Thus, with respect to British and American foreign commerce, it has been said that the manufactures of the two nations are "not competitive in all cases, many of the products being more or less complimentary." Moreover, the increasing share of the United States in the markets of the world is due in part to "new business rather than to trade diverted from British and other suppliers." Yet it is admitted that there is strong competition in international markets for the sale of staple articles, and that unless the products of a nation are unique in some respect they do not have a firm hold on consumers.

Domestic versus Foreign Commerce

In a former chapter we discussed the domestic trade of the United States. It was apparent in that place that consumption of goods at home far exceeds that of the exports whether of manufactures or raw materials. In 1929 the value of manufactures in the United States was upwards of \$70,000,000,000, but the export of manufactures in that year was only about \$3,100,000,000, including manufactured foodstuffs. A similar condition prevails with respect to other countries. With some 125,000,000 people or more to provide for in this country, with some 64,000,000 in Germany, and with some 41,000,000 in France, it is obvious that the most important market is at home, and that manufactures are organized primarily for the needs of the domestic population. This is even more patent with respect to the crowded countries of the Far East, where the export trade is small in relation to domestic consumption.

Yet the export trade in fabricated goods performs an important function in the national economy. For one thing, it enables countries to obtain commodities which domestic establishments cannot produce;

sometimes it enables them to obtain similar goods at lower prices than can be purchased at home. But it also supplies a surplus market wherein large quantities of goods may be sold, and thus mere manufacture for export adds materially to the employment possibilities within the countries. In addition, it supplies a large part of the purchasing power—in some countries most of the buying power—for imported commodities, and in less obvious ways it contributes to the upbuilding of the national economy.

Products of Hand Industries

Even in international trade, machines, and the related processes of standardization, have not crowded the products of hand labor from the markets. As far as domestic trade is concerned, by far the greater portion of the world's population still lives by the output of human energy, aided only by the simplest of devices. Industrialization in a few countries, therefore, should not obscure the fact that hand-made production is still the system of many millions of people.

Foreign commerce is supplied with hundreds of products made by the skill of artisans working only with the simplest tools. This applies to a variety of textiles, leather work, wood carving and finishing, and even to a considerable amount of metal work, not to mention all the classes. So-called Oriental rugs are in this class. In Turkey, Persia, Afghanistan, India, and China are thousands of persons whose chief asset is traditional skill in handicraft, aided perhaps by an infinite amount of patience. The market value of rugs at the source is not great, but final consumers often put extravagant values on these objects. The manufactures of the countries named above are mainly of the home and shop variety. They include cottons and woolens, carpets, shawls, silk and linen fabrics, and to some extent embroideries and laces.

In addition, in Turkey at least, home industry produces a great variety of bazaar and specialty articles, such as lamp shades, decorations, embroideries, kimonos, Brusa toweling, meerschaum beads, mosaic necklaces, ivory and alabaster goods, to mention only a few of the products. What is true of Turkish industries applies also to products of other countries which have not attained to machine production. Among the more primitive peoples of America, rug-making, basketry, ornamental textiles, and in some Latin-American countries, the so-called Panama hats, are products of individual workmanship. Similar illustrations could be found even in many of the countries of Europe. This

is the case of much of the Gablonz ware, a generic term which includes a great variety of glass art goods and imitation jewelry, the product mainly of individual workers whose only shop is the home. Such products are collected periodically by the exporter or his agents for shipment. In the "manufacture of glass jewelry the different types favored by various nations are made the subject of careful study and cataloguing. For example, amber and ruby-colored bangles are much in demand on the Indian and Egyptian markets. As a matter of fact, British India, next to the United States, is the best customer for goods of this kind."⁸ The Gablonz industry includes not only glass-ware, but products of the non-precious metals, wood, celluloid, horn, bone, paste, and clay. As is usual in cases where workers of a country establish a foreign market for their wares, competition makes an appearance from other sources. For some of these products Germany has become a competitor, and Japan supplies some Far-Eastern markets.

Examples could be multiplied to show that hand-made articles still have a place in international trade. Many goods exported from France, Switzerland, and Italy still bear the impress of hand workmanship. And it should be added that in many parts of the world the primary processing of many raw materials is often a hand process, whereas in industrialized countries, such functions are performed by a machine.

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⁸ A. F. Rockwell, *Trade Information Bulletin No. 461* (U. S. Department of Commerce), 1927, p. 8.

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CHAPTER XVIII

FOREIGN TRADE IN MINERAL PRODUCTS

International trade in mineral products is one of the features of this industrial era. Never before in the history of commerce have these commodities ranked as high in importance. Some of the reasons are the following: These materials are a necessary constituent in the development of the machine system; as a rule, they are very unequally distributed over the earth, without reference to political boundaries, or to present industrial needs; even when they are widely distributed they do not exist in many places in the grades or qualities required by industry; and finally, with the growth of specialization, many kinds of metals are needed to fabricate products which meet the more or less exact demands of the trades.

The Mineral Age

A good claim can be established for the statement that the mineral age began in the second half of the nineteenth century. If we may take the United States as an example, the average annual value of mineral products, both metallic and non-metallic, increased from \$426,100,000 in the five years ending with 1885, to \$5,590,000,000 for a similar period ending 1930. Iron and copper have been in use for centuries, but production in the modern sense had scarcely begun before 1800. Mining is something more than scraping the surface, or of scooping up bog ores, as was sometimes the process with iron in the past. As we understand the enterprise to-day, it involves the penetration of the earth sometimes to great depths. This involves the use of power and of appropriate tools and machines—things that did not exist before the coming of the mechanical age. It includes also means of mine transportation and of adequate hoisting devices. Such equipment has come into existence only in recent years.

The relations are even more complex. It would not be worth the effort to devise such equipment unless there was a market for large quantities of mineral products; this is connected with the technical development of manufactures and with large purchasing power in the hands of

ultimate consumers. These conditions, also, have been supplied only in recent times.

Whatever the importance of other minerals, the great foundations of the modern system rest upon iron, copper, coal, and petroleum. As we have related in a former chapter, a number of important improvements were made in the latter part of the eighteenth century in processes of smelting ore and in furnace-construction which increased somewhat the efficiency of the iron industry. Yet these fell far short of the requirements for rapid progress. What was needed was a method which would produce the desired metals quickly and in large quantities. With respect to steel, this was supplied in 1856 with the introduction of the Bessemer process. Since that time hundreds of improvements have been made in the details of mill-construction and operation, but the goal has always been an ever-increasing quantity of materials and the reduction of the prices at which they could be sold. These improvements have enormously enhanced the uses of steel. The subsequent invention of the open-hearth method and, after 1890, the introduction of alloy steels, supplied further requisites for the progress of this industry.

Since iron is the basis for all machinery, the manufacturers of this metal are the beneficiaries of every new invention. As examples, we may cite the enormous business which fell into the hands of the iron and steel-makers with the development of railways, with the demands of the petroleum business after 1860, and with the coming of the automobile. In a similar manner, the invention of hoisting machinery, which made the skyscraper a possibility, gave the mills a great new market for their products.

The age of copper is contemporary with the age of electricity. Step by step, even from the time of Franklin, discoveries in electricity took on new features. Contributions to this progress were made by Volta in 1800. Subsequently, Oersted learned that currents produced by Voltaic cells created a magnetic field. Herein was a basic suggestion for devices making use of electro-magnetism, and the dynamo and motor came within the realm of possibilities. To round out this series of discoveries it only remained for Faraday to show that the movement of a magnet in a coil of wire could produce a current. The first crude dynamo came into existence in 1831. Thus far these were only laboratory experiments, in the field of pure science, and it remained for commercializers to take hold of the new ideas and found industries to use them. As late as 1860, from the commercial point of view, the telephone was the only representative of the electrical industry. What we have to-day is a product of

the commercializing enterprise which has appeared since that time. The burden of supplying manufacturers of electrical goods fell to the lot of copper producers. Meanwhile, other great uses have been found for the red metal, as in building construction, in the automobile business, in the manufacture of valves, pipe fittings, bearings brushings, wire, rods, and wire cloth, among many other uses.

Petroleum is also a creature of modern industrial needs. As with other minerals, minor uses for this substance can be traced back for centuries; but these were of no significance, because they produced no results which might have been of use to modern industry. The history of petroleum began in the decade from 1850 to 1860 when chemists inaugurated a study of products which might be used for illuminating purposes. Coal was distilled for this purpose in western Pennsylvania, but shortly the discovery was made that kerosene extracted from petroleum oil could be consumed safely in oil lamps. But the great era of development came after 1900 with the introduction of the automobile. Since that time, other classes of consumption have added to the demand. The United States has always been the greatest producer, and our development may be taken as an example of the expansion of this business. The average output in the five years ending 1865 was 2,479,000 barrels; it was 895,700,000 barrels in a similar period ending 1930.

The age of coal is also contemporary with the age of industrialization. Used in the smelting of iron ore, as a fuel for factories and locomotives, as a means of heating homes, for the production of gas, to say nothing of hundreds of by-product uses, the development of coal mining has kept pace with expansion in these other lines. In the United States, the average annual output from 1821 to 1830 was only 140,000 tons; it was 595,000,000 tons in the years from 1926 to 1930.

The extensive use of other minerals has been largely contingent upon the development of industries which we have just discussed. As an outcome, many substances which had no commercial application a hundred years ago are now among the common industrial materials, and, once introduced, their uses have been intensified and diversified.

Modern Uses of Metals

Modern industry makes some use of practically every known metal, and new uses are constantly being discovered. It is not safe to rate the industrial significance of a metal merely on the volume which enters consumption. Only small quantities of some substances are used in the trades, yet they are absolutely necessary for the success of industry as it

is organized to-day. Tungsten, for example, is used in tool steels where iron and steel must be turned, planed, drilled, or cut, with the following results: "Probably the total saved by (this metal) worth about three-quarters of a million dollars in the United States is not less than two and a half or three billion dollars annually. In addition, the use of tungsten permits the manufacture of innumerable conveniences, comforts, and luxuries, including . . . radio tubes, electrical contacts, airplane and automobile valves, phonograph needles, and others. The importance of tungsten among the metals in our type of civilization is comparable with that of lead and zinc and is exceeded only by that of iron and copper."¹

Thus every country which has a highly developed iron and steel industry must make use of this metal. But the supply is obtained in only a few places. China is usually the most important producer with an annual output ranging from 5,000 to 10,000 tons. Other regions, except Burma, rarely produce as much as 500 tons a year.²

With reference to industrial importance, a similar account could be given of platinum, tin, vanadium, molybdenum, chromium, cobalt, and nickel, although the monetary savings in the use of these substances is not so great as with tungsten.

These metals have become of great significance to industry notably since 1888 when Sir Robert Hadfield introduced manganese-steel and thereby blazed a new trail for the metallurgical industries. Since that time, steel-makers have been introduced to more and more beneficial results from alloying one metal with another. The outcome has been the production of a number of types of metal which serve highly specialized uses, and perform necessary functions much more effectively than could ordinary steel. But incidentally, this development has made necessary an enlargement of the scope of world commercial enterprise in order to locate new resources and to deliver the product to consumers.

Because the automobile probably receives harder usage than any machine, and because the users expect more efficient service, in spite of the abuses to which they subject their cars, the automotive industry is most exacting in its demands upon steel makers with respect both to variety of steels and to their adaptability to particular uses. The following statement illustrates this point: "The supporting portions are frequently made of nickel steel; the axles of quarternary steels; the

¹ *Mineral Resources of the United States*, 1927, Part I, p. 435.

² J. W. Furness and L. M. Jones, "Mineral Raw Materials," *Trade Promotion Series No. 76* (U. S. Department of Commerce), p. 221.

valves of high-chrome steels, which will resist oxidation and corrosion by hot gases; the wearing parts, such as crank-shafts, gears, etc., of case-hardened nickel steel, often containing some chromium to increase the intensity of the heat-treatment. The springs are made of silico-manganese steel for resilience. The ball-bearings are of chrome steel, or even of quarternary steel, to increase their hardness, etc. What applies to parts of automobiles is still more effectively true for airplanes, which must be as strong as possible, in order to give strength with light weight and reliability.”³

What is true of nickel, chromium, and vanadium also applies to other metals. Their uses are constantly expanding under the direction of laboratory experts. Nickel, for example, has for years been a constituent of so-called nickel coins; but this is now only one of many uses. Nickel, silver, and copper alloys find many uses; the radio business consumes pure rolled nickel as rods, strips, wire, and for tubes; nickel plating has been a common application of the metal for some years; the metal enters alloy-cast-iron, magnetic alloys, nickel brasses, bronzes, and nickel-aluminum alloys, and heat resisting and electrical metals; monel metal, an alloy of this material, has many applications. And still the research goes on. Efforts are being made to develop many shades of alloys to include “many pastel shades of pink, tan, salmon, lemon, green, blue and purple,” in the hope that this line of investigation will “develop into quite extensive use in plumbing fixtures, architectural trim, and certain classes of food-handling equipment.”

Other metals also are under scrutiny for the purpose of finding new commercial applications. Even the members of the rare platinum group—iridium, palladium, rhodium, osmium, and ruthenium—are turned to some commercial account. Companies which produce these substances, usually as a by-product in the refining of some baser metal, are constantly in search of new ways in which the commodity may be brought into the service of industry. The significant fact for our purpose is that once these articles have become entrenched in consumption, they create new relations which make continued use necessary, and this increases the need for new resources, sends explorers into many parts of the world, and lays the burden upon industry and commerce of delivering the materials to ultimate consumers. When industry has been wound up, no one wants to face the disagreeable experience of unwinding, for this means the denial of customary goods, many of which we have learned to accept as necessities.

³ Stoughton and Butts, *Engineering Metallurgy*, p. 194.

In this connection, witness the star position held by some metals. "Platinum, as a necessary catalyst in sulphuric acid making acts as a key which unlocks a cheap process of chemical synthesis; antimony is essential to the production of clear printing type metal; mercury is a key metal in precise scientific instruments; the non-metallic minerals such as sulphur, arsenic, silicon, etc., play equally important rôles."⁴ How soon beryllium will enter the star chamber with the other key materials is for the research man to decide, but he is now on the trail. Obviously, there is much to recommend this metal if the cost of production can be greatly reduced. It is about as light as magnesium, as resistant to corrosion as silicon, with a melting point above that of copper, almost as strong as steel, and with a thermal expansion similar to iron.

Industrial Research

The spirit of modern industry is revealed as much in what it tries to do as in its actual achievements. One expression of this spirit is the effort of thousands of research men in the employment both of government and industry to penetrate into the realms of the unknown in order to discover new secrets which may be of industrial use. This is a relatively new enterprise, and, in some respects, it has supplied the key to modern industrial progress.

Industrial research is inspired by a number of motives: to discover more diversified uses for products so as to increase sales, as with the producers of copper, aluminum, and zinc; to find totally new products, as with research in many chemical industries; to improve materials and processes; to discover cheaper methods of production; to learn how to convert waste materials into salable by-products, and many other purposes.

The popular mind associates with research such substances as rayon, dry-ice, liquid oxygen, and neon—a rare gas discovered in 1898, which has been turned to commercial use in advertising signs. But in a much quieter way, scientific studies are penetrating to the foundation of industry to learn methods of more effective and serviceful production.⁵

In the last chapter we referred to the large expenditures of the chemical industry for this line of activity. Similar expenditures by automobile manufacturers were estimated at \$100,000,000 annually, by

⁴ W. H. Voskuil, *Minerals in Modern Industry* (John Wiley and Sons, Inc., New York, 1930), p. 23.

⁵ Lippincott, *Economic History of the United States* (3rd ed.), p. 347.

producers of rubber \$100,000,000, by metal making plants \$63,000,000, by food product industries, \$47,000,000, and large sums by other major groups, bringing the aggregate to more than \$500,000,000 a year. The immediate effect is upon domestic industry and trade, but eventually through the diversification of products, through the lowering of costs, and through the more varied requirements for raw materials, the effects ultimately penetrate all commercial relations.

International Interdependence

It ought to be evident from this discussion that the outcome of research activities is not to make the nations more self-sustaining, as some have contended, but to greatly increase the dependence on the outside world. This is true for two reasons; the first is that in so far as research unearths uses for hitherto unimportant resources it makes their further quest necessary; and it must be observed in this connection that most minerals, at least the chemical elements they contain, cannot be reproduced by any known method. They must be obtained from the reserves in which nature has stored them, in whatever parts of the earth these may be. Second, when research produces new commodities, it creates at the same time the need for markets, and foreign consumers add greatly to such prospects. The other differences which we have discussed in a former chapter always operate to encourage international trading.

With respect to industry, the significant fact is that only a few of the metals are widely distributed in commercial forms, and, as a result, they must be obtained through the processes of trade. In this connection it has been said that "the limitation of the sources upon which the industrial world has largely depended during the past five years (prior to 1929) may be illustrated in part by the following example: The United States, the United Kingdom, France, and Germany produce more than three-fourths of the world's output of coal. The United States, Mexico, Russia, Persia, and Venezuela produce 90 per cent of the world's output of petroleum. Three economic centers—United States, Lorraine, and the United Kingdom—produce 85 per cent of the world's output of iron ore. Copper is furnished from three major sources, tin from three, nickel from two, and so on."⁶

It follows from these considerations that no region in the world has a well-balanced assortment of the minerals. All nations must import to satisfy some of their requirements, and some, indeed, are very large

⁶ J. W. Furness and L. M. Jones, *op. cit.*, p. 221.

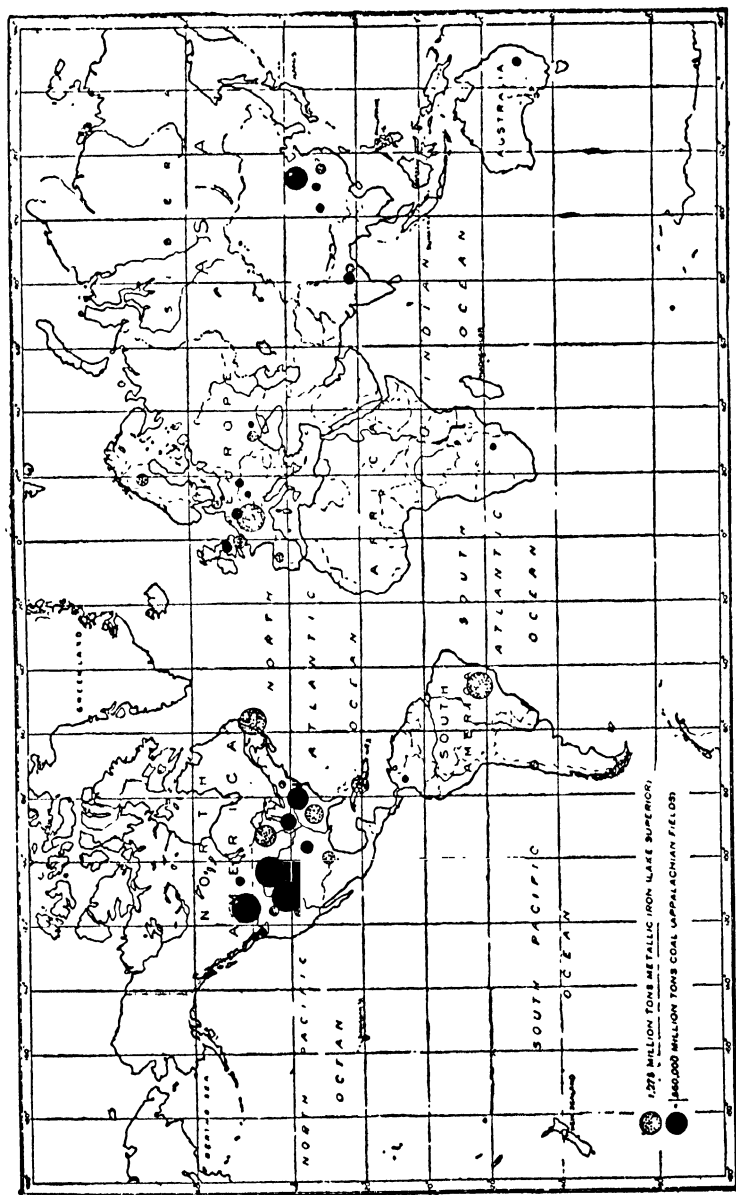


FIG. 18. DISTRIBUTION AND RELATIVE SIZE OF THE CHIEF IRON AND COAL RESERVES OF THE WORLD

importers. The United States is in a better position than any other nation. We have ample supplies of coal, and an abundance of iron, at least for present needs, and great supplies of copper and petroleum. Of lead and zinc this country could produce for some time enough to satisfy domestic demands, and still have a surplus for export. On the other hand, the United States depends almost entirely on foreign sources for antimony, chromite, manganese, nickel, tin, asbestos, natural nitrates, platinum and potash, and we must look beyond our borders for considerable quantities of mercury, tungsten, barite, china clay, fluor spar, graphite, magnesite, mica, and pyrite.⁷ Some of these substances are known to the reader only as names, but all of them have important industrial uses, and in some cases industrial processes are absolutely dependent upon them. Mica may serve as an example. It is unique in some of its physical properties, upon which its industrial uses depend. It possesses elasticity, toughness, flexibility, transparency, "ability to withstand sudden excessive changes in temperature, dielectric strength, and the ease with which it may be split into thin films."⁸ In the form of sheet or block muscovite, it is a necessity in electrical work.

While the United States is far from being self-sustaining in its supplies of industrial minerals, the situation is even less favorable with the other industrial nations. Britain has practically only two great mineral resources that are adequate to her needs, namely, coal and iron. The character and location of the coal deposits are fortunate both for the development of domestic industries and for the export trade. The quality is of a high grade, the fields are well distributed over the Island, in some cases being on or near the coast, so that export handling is a matter of small cost.

But with respect to other minerals, Britain is not as fortunate as with coal. While iron ore is abundant, it is of low grade, and for many purposes the English industry is dependent on outside sources of supply. In the earlier stages of her development, local supplies of lead and tin satisfied domestic needs, but this is no longer the case. Further, Britain must now look beyond her borders for a long list of essential mineral substances, including copper, petroleum products, and all the minor metals which are so essential to-day for the success of varied industries.

⁷ C. K. Leith, *World Minerals and World Politics* (McGraw-Hill Book Company, Inc., New York, 1931), p. 50.

⁸ J. W. Furness and L. M. Jones, *op. cit.*, p. 251.

This country draws its supplies from practically the whole world. Iron ore is imported from Spain, Algeria, Norway, Sweden, France, and Tunisia; and pig iron is brought in from Belgium, France and Sweden. Lead is imported from Australia, Spain, Mexico, the United States, Canada and Rhodesia. The supplies of mercury are chiefly from Spain and Italy; nickel, chiefly from Canada; tin from British Malaya and Netherland East Indies; zinc is obtained from the United States, Germany, Poland, Canada and Australia. The sources of the non-metals are just as widely distributed over the world. Asbestos is imported mainly from British South Africa and Canada; graphite from Madagascar, Japan, Ceylon and Italy; magnesite from Greece, Austria, Netherlands and Italy; mica mainly from India; nitrates from Chile; supplemented by smaller amounts from Norway, France, Belgium and Germany; petroleum from Persia, Netherland West Indies, Mexico, the United States and Dutch Borneo.

This is an imposing array of sources which are needed to supply the industries of the British Islands, but this does not tell the whole story. This commerce involves an organization both to produce the crude stuffs, and to finance and transport the materials to places of consumption. This signifies that a vast organization has come into existence, with ramifications reaching to every corner of the earth.

Germany

Germany presents a different set of conditions, but these do not relieve the country from dependence on the outside world. The fates of war played havoc with some former resources of this country, notably the iron of Lorraine, which passed into the hands of France; thus an important part of domestic needs must now be supplied by imports.

Germany contains within its own borders sizable quantities of iron ore (in spite of the war losses), of coal, lead, zinc, and copper; but for one reason or another she is forced to rely on the import trade for considerable quantities of all these materials. In the Stassfurt district she has the largest supplies of potash in the world. But she is notably deficient in various other minerals. Deposits of petroleum are of but slight importance. Resources of bauxite, chromite, mercury, nickel, and tin are of little or no commercial value. Although the deposits of the last named metal in the Erzgebirge district have been worked for many centuries, they are said to be practically exhausted. Of asbestos, sulphur, magnesite, mica, and phosphate rock the domestic reserves are either

small or non-existent. Thus, reliance on the external trade has become a necessity.

Bauxite is imported from France and Italy, with minor quantities from Yugoslavia, Austria, Hungary, and Spain: aluminum is brought from Switzerland, Norway, the United Kingdom, and smaller amounts from France, Belgium, Austria and the United States; antimony comes mainly from China; chromite from India, British South Africa and Australia; unmanufactured copper from the United States, Chile, Belgium and Belgian Congo; iron ore from Sweden, France, Spain, Newfoundland, Luxemburg and Algeria; and pig iron from various sources. Lead ore is imported from Australia, Chile, Spain and Algeria, and the metal from the United States, Mexico, Spain and Poland. Tin is obtained principally from Bolivia and tungsten from China. Asbestos is imported mainly from Canada, British South Africa and Russia, and petroleum mainly from the United States, Mexico, and Venezuela. Other materials are also obtained from many parts of the world. In one important respect at least, Germany is in a much less favorable position than Britain; namely, she does not possess adequate amounts of the invisible purchasing power of the latter country. Britain's position is made much easier than that of other countries which are forced to depend on imports by virtue of the fact that she is a creditor nation, and that the debtors may pay her directly, or indirectly, in such materials as she needs for manufacture.

France

Physical resources vary greatly from country to country. France has some advantages which the others lack, but in only a few respects can her mineral resources be considered abundant, particularly in respect to future needs. This country possesses within her own boundaries large quantities of bauxite—the raw material from which aluminum is produced—iron ore, potash and a few minor substances; but she is notably deficient in coking coal, petroleum, copper, lead, and zinc; and this country, as with many others, does not possess even a mediocre assortment of the essential minor metals, nor of many of the non-metallic minerals.

France is not only an important producer, but is also an exporter of iron ore, bauxite, aluminum and potash. Production of iron ore has increased notably since the war, due mainly to the acquisition of former German resources.⁹ The output in 1930 was about 48,800,000

⁹ Leith, *op. cit.*, p. 60.

tons, compared with 21,900,000 tons in 1913. Her commercial iron ore reserves are now considered the third most important in the world.¹⁰ The known deposits have been estimated at 1,790,000,000 tons, with possible additional potential reserves amounting to 2,580,000,000. The principal deposits are in Lorraine, Normandy, Anjou-Brittany, and in the eastern Pyrenees. The exports of ore in 1928 were 16,700,000 tons, but these dropped to 12,200,000 in 1931. As with all iron and steel-producing countries, France finds it necessary to import certain kinds of ore, and these are brought chiefly from Belgium and Luxemburg, Spain, and Tunisia.

France is both a producer and exporter of bauxite. The known reserves, which are larger than any other country in Europe, are located mainly in southern France. Exports sometimes exceed 250,000 tons a year. Potash resources, mainly in the Alsace district, are among the most important known deposits in the world.

While the needs of French industry are not of the same magnitude as some of the industrialized countries, they are about as diversified, and France, also, must draw her supplies from wide sources. Antimony ore is imported from Algeria, Bolivia, Argentina, and Portugal; copper in the form of ore and matte from Algeria, Portugal, and Spain, and as metal from the United States, Chile, and Belgium; lead ore from Tunisia, Algeria, and Spain, and so on. Practically all the larger countries engage in a considerable reexport business, and in many instances, the metal which they export does not originate within their own borders.

Italy

In recent years Italy has developed a diversified industry of considerable proportions, but progress is handicapped by a shortage, or entire absence, of some of the most important minerals. Thus it has been said that the position of this country in the world markets "is largely that of a dependent nation. Of the twenty-eight (leading) minerals Italy produces an exportable surplus of only seven. It is self-sufficient in seven, is partially dependent in three, and almost entirely dependent in twelve minerals."¹¹ The iron ore reserves are estimated at only 5,500,000 tons, with an additional probable reserve of 3,300,000 tons. Domestic reserves of coal are small and are of poor quality.

¹⁰ J. W. Furness and L. M. Jones, *op. cit.*, p. 76.

¹¹ *Ibid.*, p. 123.

Russia

Since about 1925 Russia has embarked upon a great program of industrialization. Normally, this would involve not only the building up of domestic manufactures, but a more thorough exploitation of mineral resources for the purpose both of domestic supply and export. Whether or not this part of the program can be carried out depends upon the varied reserves of the country. At present, Russia is an exporter of a few important products, including platinum, manganese, and petroleum. The reserves of coal and iron are probably sufficient for local purposes, but the country is an importer of some of the base metals. This vast territory has never been adequately surveyed and its future for mineral production is unknown.

Japan

As we have indicated in a former chapter, this country possesses within her own borders only mediocre supplies of some of the most important minerals. The copper reserves come nearer meeting domestic requirements than do most of the other resources. But even in this case a certain amount of import is necessary. The United States is the principal source of supply.

The most critical deficiency in view of the needs of Japan as an industrial nation is iron ore. Although the mineral occurs in a number of places, the resources are inadequate both with respect to character and quantity. The annual output of Japan and Chosen seldom reaches 600,000 tons a year, and is more often below this amount. This signifies that the external world must make considerable contributions of iron in one form or another. In normal years the imports of ore are about 1,000,000 tons a year, and of pig iron between 350,000 and 500,000 tons. The ore is obtained mainly from China and the Straits Settlements, which, in the latter case, probably means that the original source is somewhere in the Far East.

Japan imports aluminum from the United States, Norway, Switzerland and Great Britain; lead from Canada, the United States, Australia and India; nickel through the United States and the United Kingdom; zinc ore from French Indo-China and China (although the Islands produce considerable quantities), and the metal from Canada, Australia and the United States.

Coal is widely distributed throughout the empire, but this material is poorly suited for metallurgical purposes. The annual production is

from 30,000,000 to 35,000,000 tons which, under existing conditions afford a small quantity for export. But on the other hand, import is necessary where this mineral is used for specialized purposes. Supplies are brought from Kwantung, China, French Indo-China and Asiatic Russia.

Of the following substances Japan has only small commercial supplies or none at all: bauxite, antimony, mercury, nickel, tin and natural nitrates. She produces certain quantities of chromite, manganese ore, gypsum, and phosphate rock, and has extensive supplies of graphite (from Chosen) and sulphur.

REFERENCES

For references see end of Chapter XIX.

CHAPTER XIX

FOREIGN TRADE IN MINERAL PRODUCTS (*continued*)

In the last chapter we presented the general conditions for the development of modern commerce in minerals together with a discussion of the trade of certain countries. There yet remains for presentation an explanation of the position of the trade of the United States, the mineral trade of the Far East, and certain questions of mineral policy.

Trade of the United States in Minerals

At least from the point of view of present needs, this country possesses an abundant supply of some of the leading minerals, particularly of those which serve immediately as a basis for industry. These include the chief power resources, coal and petroleum, and the leading metals, iron, copper, lead, and zinc. In some cases there is a large exportable surplus. We are large exporters of copper, lead, zinc, petroleum, and, under certain conditions, we might make large foreign shipments of coal. In fact, during the troubles in the British coal industry in 1926, the United States exported upwards of 35,600,000 tons. But, on the whole, the location of the coal fields, chiefly in the interior, are not favorable for the development of an export business. But, at that, coal is one of our greatest resources. The reserves are estimated at 3,527,000,000,000 tons, as compared with 7,397,000,000,000 as a world total.

Although the relative position of this country with regard to iron ore is not as favorable as that with coal, the resources are large. But, on the other side it must be said that extraction is at a much higher rate in the United States than elsewhere. The principal producing section is the Lake Superior region, and the second in importance is the Birmingham district. The remaining reserves of high grade ore in these two areas are said to amount to from 3,000,000,000 to 3,500,000,000 tons. The United States exports only small quantities of ore—at best, not much in excess of 1,000,000 tons a year. Shipments are largely in the form of fabricated materials, such as bars, sheets, plates, galvanized iron, railway materials, and machinery of many descriptions. Because of the location of some plants near tidewater, and the needs for mixing with other

ores, the United States imports considerable quantities of iron ore, chiefly from Chile and Cuba, but with minor quantities from Algeria and Tunisia, Newfoundland, Spain, and Sweden.

Although the largest producer of copper in the world, the United States is also an importer, supplies of ore coming from Canada, Chile, Spain, Cuba and Mexico. The exports, mainly in the form of refined copper, run into large volumes.

Similar conditions prevail with regard to zinc. The United States is the largest producer; from present prospects the domestic supply is sufficient for some time to come. The principal deposits are in what is known as the Joplin district, which includes adjacent portions of Missouri, Oklahoma and Kansas. The metal is produced in at least a half dozen other states. This country imports ore chiefly from Canada and Mexico, and exports large quantities of the finished product. In the case of lead, although the United States is a large producer, the "reserves under price conditions prevailing during 1927 are not large as compared with probable future demand." The principal producing states are Missouri, Idaho, Utah, Colorado and Oklahoma. This country imports considerable quantities of lead ore and matte, and also of lead, as base bullion, chiefly from Mexico, Canada, Great Britain and Spain. Exports are chiefly in the form of pigs and bars.

Since the commercial beginning of the industry, shortly before 1860, the United States has been preeminent in the production of petroleum and its products. In fact, domestic fields not only supply the enormous home demand, but the American petroleum industry has penetrated practically every part of the world, both as a producer in other regions, and as a seller of petroleum products. On many occasions, estimates have been made as to the future of domestic supplies. Some have placed the life of the reserves of flowing oils as low as fifteen or twenty years, others have insisted that the resources will continue to supply large quantities of petroleum for many years. But of this we are certain—that the annual draft upon the resources is enormous, and that when the depression period is over, the demand will continue to increase. This forecast includes not only the needs of automobile owners, but the newer demands originating in more extensive use of oil burners in homes and industries, in airplanes, and for railway traction. The output in 1929 was a little over 1,000,000,000 barrels, which was much more than was required for domestic consumption and export. Under some measure of control, production was reduced to 851,000,000 barrels in 1931. In the face of the large home production, this country imports

certain quantities of crude petroleum, chiefly from Venezuela, Mexico, Netherland West Indies, Colombia, Peru, and Trinidad. The exports of the crude product are small, but shipments of refined and lubricating oils are among the largest items in the export trade; to those should be added fuel or bunker oil for vessels in foreign trade, which are not included among our exports.

Something should be added in regard to the international organization. Ownership of foreign petroleum resources has drawn large amounts of capital from this and other countries. Possibly the United States dominates the field, because of its "experience, organization, money, and technical skill."¹

The American position is not so favorable with respect to other materials as to those just named, although, in some cases, the country possesses sizable reserves which could be utilized under improved technique, or higher prices, or perhaps, by adequate protection for the home industry. Exploitation of minerals, like everything else, is a matter of comparative costs. For the time being, the low cost resources are operated first, and in the course of years, with the exhaustion of the better grades, production proceeds down to those of poorer quality. Cost conditions, of course, include not only the actual yield of metal, but location with reference to transportation, costs of beneficiating and marketing, the availability of substitutes, not to mention all the conditions. In some cases, the advances in technical knowledge have made possible the extraction of metal from low grade ores. These conditions will no doubt continue to affect all the mineral industries, and they will sometimes be deciding elements in shifts of production from one region to another.

The United States is a large producer of bauxite, mainly from resources in Arkansas, Tennessee, Alabama, and Georgia; but it also imports considerable quantities, chiefly from British Guiana, Surinam, Yugoslavia and France. This country also exports aluminum as ingots, scrap, alloys, and as manufactures of which aluminum forms a considerable part. The United States has abundant supplies of phosphate rock estimated at 6,430,500,000 tons of high grade material. The Florida area is the largest producer, but considerable quantities are obtained from Tennessee, Kentucky, and Idaho, and extensive deposits occur in some of the western states. Exports range from 800,000 to 1,000,000 tons a year. At one time the United States was an importer of sulphur, but with the discovery of large deposits in Texas and Louisiana, and with

¹ Leith, *World Minerals and World Politics*, p. 12.

METALS AND THEIR ORES	UNITED STATES				GERMANY				FRANCE				U. KINGDOM			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
ALUMINUM		●						●	●							●
ANTIMONY				●				●			●					●
CHROMITE				●				●				●				●
COPPER		●					●					●				●
IRON		●					●		●					●		
LEAD		●					●					●			●	
MANGANESE				●				●				●				●
MERCURY			●					●				●				●
NICKEL				●				●				●				●
TIN				●				●				●			●	
TUNGSTEN		●						●				●				●
ZINC		●						●				●				●
NON-METALS																
ASBESTOS				●				●				●				●
BARITE			●		●						●				●	
CHINA CLAY			●				●				●		●			
COAL	●				●						●		●			
FLUORSPAR			●		●						●		●			
GRAPHITE			●				●					●				●
GYPSUM		●			●				●						●	
MAGNESITE			●					●			●					●
MICA			●				●					●				●
NITRATES				●	●							●				●
PETROLEUM			●					●				●				●
PHOSPHATES	●							●			●					●
POTASH				●	●				●							●
PYRITES			●					●			●					●
SULPHUR	●							●				●				●
TALC AND SOAPSTONE		●				●			●							●

FIG. 19. INDICATED ABILITY OF THE PRINCIPAL CONSUMING COUNTRIES TO THE POLITICAL BOUNDARIES

A—Minerals available in large quantities for export. B—Minerals adequate to meet domestic demands, partially dependent on foreign sources. D—Minerals

JAPAN				BELGIUM				ITALY				SPAIN				METALS AND THEIR ORES
A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	
			●				●	●							●	ALUMINUM
			●				●			●			●			ANTIMONY
		●					●				●				●	CHROMITE
	●						●				●	●				COPPER
		●				●			●			●				IRON
			●				●		●			●				LEAD
		●					●				●	●				MANGANESE
			●				●	●				●				MERCURY
			●				●				●				●	NICKEL
			●				●				●				●	TIN
			●				●				●		●			TUNGSTEN
	●						●	●				●				ZINC
																NON-METALS
			●				●			●					●	ASBESTOS
			●			●		●					●			BARITE
	●					●				●				●		CHINA CLAY
		●				●				●				●		COAL
		●				●		●				●				FLUORSPAR
●						●		●	●				●			GRAPHITE
	●					●		●		●			●			GYP SUM
			●			●				●				●		MAGNESITE
	●					●				●					●	MICA
			●			●				●					●	NITRATES
		●				●				●					●	PETROLEUM
		●				●				●					●	PHOSPHATES
			●			●		●						●		POTASH
	●					●		●		●		●				PYRITES
●						●		●	●					●		SULPHUR
		●				●		●	●				●			TALC AND SOAPSTONE

SUPPLY THEIR NEEDS OF THE PRINCIPAL INDUSTRIAL MINERALS FROM WITHIN OF THE HOME COUNTRY

demands without appreciable excess or deficiency. C—Minerals inadequate to meet for which the country depends almost entirely on foreign sources.

the development of economical means of extraction, there is an ample supply not only for domestic consumption, but also for export.

This presents the favorable side of American resources and trade. On the other hand, there is a sizable list of mineral materials which we produce either not at all, or in quantities which are below domestic demands. Import is, therefore, necessary. With some of these, as is the case with tin, the United States is the world's largest consumer. We import antimony from a dozen or more countries, but mainly from China; chromite is brought from Rhodesia, Cuba, Greece and India; manganese is obtained mainly from Brazil and Russia, and smaller quantities from British West Africa and India; mercury is imported from Spain and Italy; nickel chiefly from Canada; tin from Bolivia, British Malaya, Netherland East Indies, Australia, China and Germany (as reshipments from other sources); graphite from Mexico, Ceylon, Japan and Madagascar (obtained indirectly through French channels); mica from India, Canada, Argentina, Brazil, British South Africa; potash from Germany, Chile, Belgium and France.

This by no means exhausts our foreign sources of supply, but it is sufficient to indicate that notwithstanding our huge reserves of certain materials, we are dependent on many parts of the earth for necessary materials. In some cases these are obtained directly from original sources, but not infrequently the trade is financed and handled through indirect channels, and is delivered to our shores after paying tribute to various sets of middlemen.

Mineral Trade of the Far East

This section of the world has been much less favored with mineral resources than the West, but at present it makes a few important contributions to international trade. Tin, antimony, and tungsten are essential elements in modern economy, and it would be difficult to find satisfactory substitutes, at least at the prices at which these metals customarily sell.

These metals are not over-abundant. At present, they are extracted by rather primitive methods, which signifies that only the better grades of materials are being worked, with the result that future exploitation will require higher costs. With reference to tin which enters largely into western consumption, it has been said "that ten or twelve years hence the bulk of the rich secondary deposits of the Dutch East Indies,

of Malaya, of Siam, and of Lower Burma, will have been exhausted.”² And H. Foster Bain adds: “Whether or not the time will prove to be as short as (is anticipated), it is true that placer deposits are characteristically short-lived. In the long run, it will be the lode mining districts that will supply the tin of the world.”³ In view of future needs the known reserves of tin, antimony, and tungsten are not great.

Most of the common minerals are widely distributed in the Far East, but rarely in the right balance with coal, or transportation, or with other factors which make large scale exploitation possible. Coal is the most abundant resource, but the known quantity is only about one-fourth that of the western world. Japan, which aspires to become an industrial nation, has moderate amounts of coal and meager supplies of iron within her own boundaries. Attempts are being made to meet this difficulty by using coal and iron in Manchuria. But iron ore in this latter region is of poor quality. Japan, as we have seen, is an importer of semi-manufactured iron—pig, bars, rods, plates—and small quantities of iron ore from Korea, China, and Australia. India possesses considerable reserves of high grade iron ore, but lacks adequate supplies of coking coals. Conditions in the Philippines and in the Dutch East Indies are somewhat similar to those in India. The non-ferrous metals are found in many places in the Far East, but not in as great an abundance as in the western world, and in even insufficient quantities to supply the international markets.

China of the legends is pictured as a country of unlimited resources which can be tapped when the rest of the world has largely exhausted its supplies. But these hopes have been largely dispelled by modern surveys. One authority puts the case in these words: “On the contrary, her iron ore resources must be termed very modest, or even scant, when her potentialities of industrial development are taken into consideration, and the strictest economy would be indispensable to guard against future unpleasant contingencies.”⁴ Of the same purport is the following: “The evidence would seem to be conclusive that there is no warrant in present knowledge for the expectation that China will be able to supply iron ore that will contribute to the world’s exportable surplus to any considerable degree or even that China can

² H. Foster Bain, *Ores and Industry in the Far East* (Council on Foreign Relations, New York, 1927), p. 164.

³ *Ibid.*, p. 164.

⁴ Bain, *op. cit.*, p. 84.

support for any long period a domestic industry consuming steel per capita at a rate comparable to those in western countries.”⁵

As yet there is little or no commerce among the Far-Eastern countries themselves in crude or semi-manufactured minerals, and relatively little trade in manufactured products. Commerce in the latter depends upon an established metal industry, and, with the exception of Japan, this has not made its appearance. The trade in mineral products, at least under present conditions, presupposes the existence of ore bodies which can be worked economically, and this depends upon the extent and quality of the resource itself, the availability of the materials for extraction and cheap transportation. The lack of these conditions is a handicap to the development of Far-Eastern mineral resources.

Petroleum presents a somewhat different picture, although there seems to be no prospect of development on anything like the scale which prevails in the western world. The mineral exists in scattered resources from Siberia to Netherland East Indies. But nowhere are the sources prolific, compared with western standards. Chiefly with the aid of foreign capital, some of these resources have been developed to the point where they supply large volumes of products to foreign trade. In 1931, Netherland India, which yielded the largest quantities, produced about 35,000,000 barrels of crude petroleum, and India, Sarawak, Japan and Taiwan together produced about 13,700,000 barrels—quantities which are insignificant compared with the 850,000,000 barrels from the United States, or the 1,370,000,000 barrels as the world total.

The outlook for commerce in mineral products among the Far-Eastern countries themselves, or between the East and the West, may be summarized as follows: “The Far Eastern countries are characterized by deficiency in mineral resources rather than by abundance. A few striking exceptions occur. Of tin, tungsten, and antimony the Eastern countries have a surplus that is of world importance. The Malay States, with Siam, the Netherlands East Indies, and China are now able to dominate the world’s trade in these metals, and, while some falling off is to be expected as the rich surface placers of tin and tungsten are exhausted, the Eastern countries may be expected to continue to occupy an important, if not the chief place in the trade in these minerals. . . . These three represent the major contributions of the Far East to the exportable surplus of the world trade in minerals.”⁶

⁵ Bain, *op. cit.*, p. 96.

⁶ *Ibid.*, p. 206.

Contributions of Africa and Oceania

As yet a great part of Africa is an unknown quantity with respect to mineral resources, but in several respects, portions of the continent make material additions to international mineral trade. Since the discoveries in the Witwatersrand, about 1885, this section has added many millions of dollars of gold to the stocks, and more than any other region, has helped to maintain the annual supply in some proportion to the world's commercial needs. Diamonds are another great contribution; in recent years the annual export has amounted to from 1,500,000 to 3,500,000 carats. Still more recently Rhodesia and Belgian Congo have taken rank among the leaders in the production of copper.

Africa also adds something to world's commerce in minor materials. Mica is exported from Transvaal, Rhodesia and Madagascar; manganese from British South Africa and from British Southwest Africa; asbestos from Rhodesia and British South Africa; and graphite from Madagascar. In North Africa, phosphate rock is exported from Tunisia, Algeria, Morocco, and Egypt; antimony from Algeria and Tunisia; lead from Tunisia, and zinc from Tunisia and Algeria. Australia contributed gold, silver, copper, lead, tin and zinc.

The Prospect

With respect to all mineral substances, one important fact is often overlooked; namely, that they are all vanishing resources. The arts of man have never demonstrated methods of reproducing any of these products, at least on a commercial scale, as the output of fields and forests may be increased. Thus some persons are beginning to realize already that the world's supplies must be conserved.

Further, in our estimate of future demands upon resources, we often forget that at present the draft upon minerals is made by only a small percentage of the world's population. It would not be far from the truth to say that about 20 per cent of the world's peoples consume annually about 80 per cent of the present annual production of coal and iron, and even a smaller percentage of the world's population are users of the annual production of petroleum. The other regions have not yet reached the stage where they can demand large quantities of these commodities. If their consumption were on the same level as that of the industrial nations, the draft upon nature's reserves would be much greater than it is to-day, and exhaustion would occur in the near future. Possibly in even less than a hundred years, when the more back-

ward countries have caught up with the advances of the industrial system, the problem of supply of metals will become an alarming question.⁷

This applies more to iron than to any other metallic substance. For this material in its varied uses, there is no known substitute. Mechanical industry depends absolutely upon it. The condition is made more critical because of the fact that, in many of its forms, iron must be exposed to weathering, which results in enormous annual losses. There is enough preventable waste, but a very considerable portion of the loss cannot be prevented because of the nature of the use. The dependence of the industrial world on iron is shown by the fact that it makes possible our transportation systems, and our machine industry, and it is also essential for our modern methods of construction.

If the eastern world is ever to develop an extensive factory system, the rather meager resources upon which it must depend will be taxed far beyond the limits of those in the West. And, as we have already suggested, the reserves are not great enough to bear this load. These conditions portend great changes for the future course of commerce.

Precious Metals

Gold and silver play an important part in the commerce of the world, although their chief rôle is not that of industrial materials. In many countries, gold is preëminently the money metal, used as a standard of value, but only to a limited extent as a medium of exchange. It performs its greatest function in the form of bank reserves, where it sustains an enormous bank credit. The importance of this use, in modern economy, can hardly be over-estimated, for bank gold bolsters up the credit which, in turn, converts non-liquid into liquid assets, and thus works great economies in all the processes of trade.

It should be remarked, however, that large quantities of gold, at times as much as half the annual production, are used in the arts. In this respect it serves directly an industrial purpose. Silver is still used extensively as money. This métal, also, is consumed extensively in the arts, particularly in jewelry and plate, and manufacturers make considerable use of silver in the production of compounds, notably the chloride, bromide, iodide and nitrate. In addition to other uses, the first three are employed in the preparation of photographic papers, dry plates and gaslight papers.

⁷ Lippincott, *Economic Resources and Industries of the World*, 1929, p. 634.

That these metals are important elements in international commerce is shown by the fact that the annual production of gold is frequently in excess of \$400,000,000 a year, and that of silver, in average years, from \$200,000,000 to \$300,000,000 a year. In one way or another, in the countries of origin, these metals find their way into the channels of trade, serving sometimes as merely commodities for export, and sometimes as money metal, acting upon the intricate balance sheets of the nations.

At one time, in Russia, platinum was used for coinage; but the rarity of the metal, and difficulties in mintage, led to the abandonment of this use. Platinum is now consumed chiefly in the arts, and is used in equipment (to a limited extent because of the high value) in chemical, electrical, and a few other industries.⁸ The chief sources of supply are the Ural Mountains in Russia, and Colombia in South America. Minor quantities are obtained as a by-product in certain metal industries.

Gold and silver are mined in all the great world divisions. South Africa is the most important producer of gold; North America ranks second in importance with the United States and Canada contributing the largest quantities. Considerable quantities are mined in British India, Japan, and Netherland India, in New South Wales and Western Australia, and now in Russia. North America is the chief producer of silver, some of which is obtained directly by mining processes, and some indirectly, as a by-product of smelting and refining of other ores. Some thirty or more regions add their quota to the annual supply.

Precious Stones

For one reason or another, precious stones have been factors in the trade of peoples for centuries. The motives are varied—love of ornament, conspicuous consumption, superstition, accumulation of treasure in imperishable forms—all operate in various proportions to keep alive the demand for such commodities. Whatever the motive, the demand for these articles are forces which have led to explorations, to the building up of business enterprises, and to the investment of large sums in resources which contain the coveted stones. Diamonds, emeralds, rubies, sapphires, amethysts, are among the best known, but dozens of others enter the jeweler's art. In the aggregate, the world trade amounts to several hundred millions of dollars a year. The export trade in diamonds of the Union of South Africa in 1929 was \$58,000,000.

⁸ E. A. Smith, *The Platinum Metals* (Sir I. Pitman and Sons, London, 1924), p. 60.

Many parts of the world contribute something to the supply. Diamonds were first discovered in Brazil in 1727, and until the opening of the South African reserves shortly after 1867, this country was one of the chief sources of supply; but India, Landak in West Borneo, Kusan in the eastern part of the island, New South Wales, British Guiana, and several others have added something to the annual quota. Diamonds have been found in various parts of the United States, as in Georgia, North Carolina, Southern Virginia, Arkansas, but except for an occasional find, like the "Morrisey" and "Dewey" stones, the sources have proved to be of little significance.

The emerald is the rarest of the beryls, and when it exists without flaws is the rarest and most valuable of the precious stones. Early Spanish explorers in South America found considerable quantities in the possession of the natives. Deposits in Colombia were discovered in 1555, and this region has continued to be one of the most important sources of supply. Emeralds were discovered in the region east of Ekaterinburg, in the Ural Mountains of Russia in 1830. The quality is much below that of the Colombian product. The stones are found also in other parts of the world, as in Austria, near Snarum in Norway, in New South Wales, and to some extent in the United States.

The ruby is a red stone, while the sapphire exists in various colors, although the article of trade is usually blue, shading down to a stone without color. Rubies occur in Burma, Siam, Ceylon, Afghanistan, Tibet, Australia, and occasionally ruby crystals are found in North Carolina. The sapphire is chiefly a product of Siam, Burma, Cashmere, Ceylon, and Australia. In all cases the quality of the stones varies from locality to locality.

The amethyst, which is a form of crystallized quartz, is found in Siberia, India, Brazil, Uruguay, and the United States. Opals occur in Hungary and Australia, and certain varieties are found in Honduras, and the United States. We should mention also the turquoise which is a product of New Mexico, Arizona, Nevada and California, and the topaz which comes from Brázil, Russia, Saxony, Egypt, Bohemia, and the United States. Jade is highly esteemed by the Chinese. It is often worn as a charm because it is thought that it wards off certain diseases. Jewelers have use for moonstone, garnet, and for amber, agate, and onyx. This says nothing of the many imitations of jewels, and of bazaar and ornamental ware of many kinds, which are the products of the hand trades in some parts of the world, but more often a machine output of the industrialized countries.

National Policy

Practically all nations realize that minerals are a vanishing resource. National policy is sometimes directed to the conservation of such products, sometimes to secure control of sources in other parts of the world, and sometimes to the protection of domestic manufacturing interests. Where a foreign import competes with the exploitation of a home resource, nations often impose duties on imported ores, or on semi-manufactures of the materials. With practically all countries, attempts are made to build up manufactures of the metals, whether the raw material originates within national borders or is brought from outside. In some instances, nations with colonies try to dominate production within their possessions and to control the product on its way to market.

Within national borders the policy with respect to mineral ownership and operation varies from country to country. In all cases systems of regulation have grown by patch-work; some nations find difficulty in correcting past errors and in making adjustments to modern conditions. In the United States, we have scarcely had a land policy that is worthy of the name. Persons have been permitted to take claims in the national domain without thought as to the best use of the land, and with rights not only to the surface, but to whatever resources lie beneath. A few nations distinguish between surface and sub-surface rights, and claims to one do not necessarily involve titles to the other.

Some countries place a tax on exported minerals, a policy which has long been followed by Chile with respect to nitrates, and more recently by Peru with exports of vanadium. Here, revenue seems to be the main purpose, although the export tax is sometimes used to conserve raw materials for domestic use, or to encourage domestic refining or production. Many countries place restrictions on foreign ownership of stock in domestic companies engaged in extracting minerals; this varies all the way from absolute prohibition of alien ownership to the confining of the control to nationals. In many parts of the world—at least in those sections where people have abandoned the idea that resources are unlimited—the thought is that minerals must be conserved for the welfare of the nation. This policy often leads to international complications, because the welfare of other countries is often involved in the continuous supply of materials from certain limited sources of supply, as is the case with petroleum and some of the minor key elements.

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CHAPTER XX

TRADE IN FOREST PRODUCTS

The forests supply a vast number of products to international commerce. Lumber in all its forms is the most important; but, in addition, the output includes gums, dyes, resins, tanning materials, medicinal products, fibers, rubber, and various edible substances. This is only a statement of the classes of forest products, but each class is represented by varieties of commodities which serve dozens of purposes. The quality of all these goods vary with the conditions under which they are grown in nature. Therefore, where they are put to highly specialized uses, it is necessary to import from those regions which produce the more or less exact qualities demanded by industry. Manufacturers have found a way of making use of hundreds of the spontaneous offerings of nature, and this demand becomes even more diversified with the further specialization of industrial uses. These differences, as with all other kinds of commerce, are the real basis of trade.

General Conditions

As a rule, where a country possesses ample timber resources, the domestic markets are of far more importance than foreign trade, although there are notable exceptions, as with Sweden and Finland. With respect to the United States, local consumption far exceeds foreign shipments. In fact, in 1929, production was 36,800,000,000 board feet, but the total export was only one-twelfth of this amount.

Estimates must be taken with wide margins, and this is particularly the case with timber which does not lend itself to easy record; but with this qualification, the annual consumption throughout the world has been estimated at between 50,000,000,000 and 60,000,000,000 cubic feet annually. Our statement above applies here also, namely, that in most cases domestic use exceeds export. Only a few countries are important surplus producers. They are the United States, which usually holds the first rank, Canada, Sweden, Finland, Norway, Russia, Poland, Czechoslovakia and Yugoslavia. In Asia, Japan is the only country with a considerable export, although small quantities are sent out by Asiatic

Russia, Siam, India, British East Indies and Persia. There is a small trade among the South American countries in timber and its products, but, on the whole, these countries are importers. The divisions of Oceania both import and export, but there is usually a considerable excess in the incoming over the outgoing cargoes. The parts of Africa are concerned only to a limited extent in the international lumber trade and on the whole their imports exceed their exports.

With respect to all regions, import takes place to make up domestic deficiencies, or to supply a character of wood which cannot be obtained from home resources, or sometimes, because for given localities, it is cheaper to rely on the import trade than upon domestic supply. A few countries enjoy a considerable reëxport business in timber and its products, and in a number of instances the exported manufactures contain more or less of foreign timber products. The largest importers in Europe are the United Kingdom, Germany, France, Netherlands, Italy, and Belgium, ranking in about the order just given. But in a number of cases these countries are both importers and exporters.

Distribution of Timber Resources

In many regions the original stand of trees has been cut away for lumber purposes or destroyed to make room for the cultivation of crops. In some instances the loss is greatest in industrialized countries where the need of sustaining a large population has made agriculture of more importance than forestry.

In earlier times, Britain was one vast forest; but with the gradual growth of population, the land was partially cleared. In addition, the needs for fuel, and later, the many demands of industry, practically completed what the early farmer had started. At present, only about 5 per cent of England and about 4 per cent of Wales is forested. In the United States, large portions of the eastern section, and much of the Mid-West east of the Mississippi river, were covered with virgin timber, but lumbermen and farmers have cleared great portions of these areas. The same process of forest removal has occurred in the temperate regions of South America, many of which have been converted into farming lands. This has been the case in the central portions of Chile, in sections of Peru, Colombia and Ecuador, and notably in southeastern Brazil, where the forests have been cleared to make room for coffee plantations, or for farming of other descriptions. A similar account could be given of forest destruction in other parts of the world.

But destruction has never been complete. Moreover, where land has

fallen into disuse a new growth makes an appearance. This may exist only as woodlots of varying size, but it sometimes covers a considerable area. Further, some countries have adopted a forest policy designed to restore cut-over land, or to keep the annual cut within balance with regrowth. But, at that, it is to the great areas of original timber that the consuming nations must look for the greater part of their supply.

An estimate of the forest resources of the world encounters many difficulties. There are still regions into which the white man has never penetrated, and the stand in other regions has been judged only from superficial appearances. Taking these conditions into account, the forest resources of the world have been estimated to cover upwards of 11,700,000 square miles.¹ In Asia the ratio of forest area to total continental area is about 21 per cent, in South America about 44 per cent, in North America about 26 per cent, in Africa about 10 per cent and in Europe 31 per cent.

The estimates for South America and Africa include many thousands of square miles of tropical forests. Timbers of such regions, however, are much less available than those of the temperate zones. Although the tropical forests contain many valuable hard woods, and not a few of the soft variety, the thick growth of underbrush makes many regions inaccessible except at great expense, and heavy rains at certain seasons of the year add to the difficulties of the lumbermen. In many instances, the stand is not continuous, and only a few trees of a given variety are on an acre. Moreover, many of the hard woods are too heavy to float, and thus exploitation involves unusual expense. For these reasons the commercial value of tropical forests must be heavily discounted.

Although many countries supply certain quotas of lumber to international trade, the great sources of supply are the United States and Canada, northern Europe, and portions of northern Asia. Most of these areas are well supplied with transportation, both inland and ocean, and access to market is thus relatively easy.

In view of the fact that the forest resources of North America and Europe are the chief sources of international supply, it is worth while to learn something of the capacity of these regions for production.

The original resources of the United States probably covered 850,000,000 acres, with a stand of not less than 5,200,000,000,000 board feet, measured by present standards. The supply was included in five great

¹ *Europa* (Europa Publishing Co., London, 1928), p. 89.

regions: (a) the Northern, (b) the Southern, (c) the Central, (d) the Rocky Mountain, and (e) the Pacific.

White pine is one of the most important timbers of the Northern forest. With it grew red pine, spruce, hemlock, cedar, balsam fir, and several varieties of hardwoods. The composition of the Central forests is primarily hardwoods of which the most important are oak, yellow poplar, elm, hickory, chestnut, red gum, ash and walnut. The Rocky Mountain forests are conifers; western yellow pine was the most common tree, with lodgepole pine, larch, spruce, western red cedar, western white pine, and Douglas and other firs abounding locally. The Pacific forests contained Douglas fir, western yellow pine, redwood, western red cedar, sugar pine, and several other firs, cedars and spruces. The Southern forest contained mainly yellow pine, with an intermingling of hardwoods on the better soils, and cypress in the swamps. Considering the extent of the original supply, and the variety of useful timbers, this was one of the greatest resources of the world. The work of the lumberman, added to waste, losses by fire, and destruction of timber to make room for farming, have reduced the original supply to about 470,000,000 acres.

In some respects the Canadian resource is a northern extension of that of the United States. Exploitation has not been as rapid as in this country, although during the last twenty years, lumbermen have made great inroads in some sections. Several hundred varieties of trees are contained in these forests, but the most important are pine, spruce, hemlock, oak, elm, maple, beech, birch, and hickory. British Columbia is supposed to contain one of the largest compact reserves of timber in the world. One of the greatest present sources of demand for Canadian timbers is in the manufacture of woodpulp. The United States affords an immense market for this product.

In Europe the timber supply is very unequally distributed both as to quantity and variety—a fact which makes necessary a certain amount of international trade. The inequalities are sometimes enhanced by lack of satisfactory transportation. In Yugoslavia, for example, in spite of the large production of lumber, distribution labors under the handicap of cost of domestic freighting; thus, for some regions, imports from adjacent states are necessary. The supply of standing timber is notably small in Great Britain, Ireland, Netherland, and Hungary. The greatest area of soft woods is in northern Europe, including Sweden, Finland, Norway, and north Russia. Central Europe, also, contains large

volumes of varied timbers, and partakes to some extent in the lumber trade of the continent.

Siberia contains one of the largest of the remaining timber resources. But at present commercial development is feasible only in western Siberia and in the Russian Far East. Timber from the former area may be sent down the Ob and the Yenisei rivers, and from the latter down the Amur. Naturally, in such a large area, the character of the forest growth varies from region to region. But, in general, the most important trees are the conifers, including pine, larch, Siberian fir, spruce, and cedar. The forests of the west contain birch and aspen, and those of other regions, the velvet tree, ash, maple and elm.

China is an importer rather than an exporter of lumber, although some regions export small quantities. Great areas were denuded of trees centuries ago to make room for agriculture, but local supplies of considerable importance are scattered throughout the country. The stand contains several varieties of pines, and a few hardwoods, such as oak, walnut, ash and chestnut. Bamboo is a useful tree in many parts of the country, as it is in Japan, India, and the East Indies. It sometimes grows a foot in diameter and may occasionally reach 100 feet in height. It is a general utility timber, used for many kinds of construction, the manufacture of furniture, agricultural implements, fence timber, mats, screens, musical instruments, not to mention all its varied uses.

Scattered in many parts of the world are local supplies of timber of more or less importance for the international trade. The Philippines, for example, export several varieties of lumber to at least a dozen countries, but mainly to the United States, China, Japan, Australia, and Canada. Most of the Philippine woods are relatively hard and heavy. Some are very durable, and beautiful in color and grain. They possess fine finishing qualities and may, therefore, be used for cabinet work and for interior finish. Many difficulties are encountered in logging in the Islands. The scarcity of skilled labor, the distance of the forests from harbors and railway lines, and the fact that much of the timberland is thickly overgrown with vines and shrubs impede the work of the lumberman.

Southern Asia supplies a few timbers to world commerce. Teak is among the most important. It is a durable wood, containing a large percentage of resin, which causes it to resist the action of water. Varying quantities are imported into the United States, Great Britain, and to some extent it enters the trade of several Far-Eastern countries.

South America is more largely an importer than an exporter of

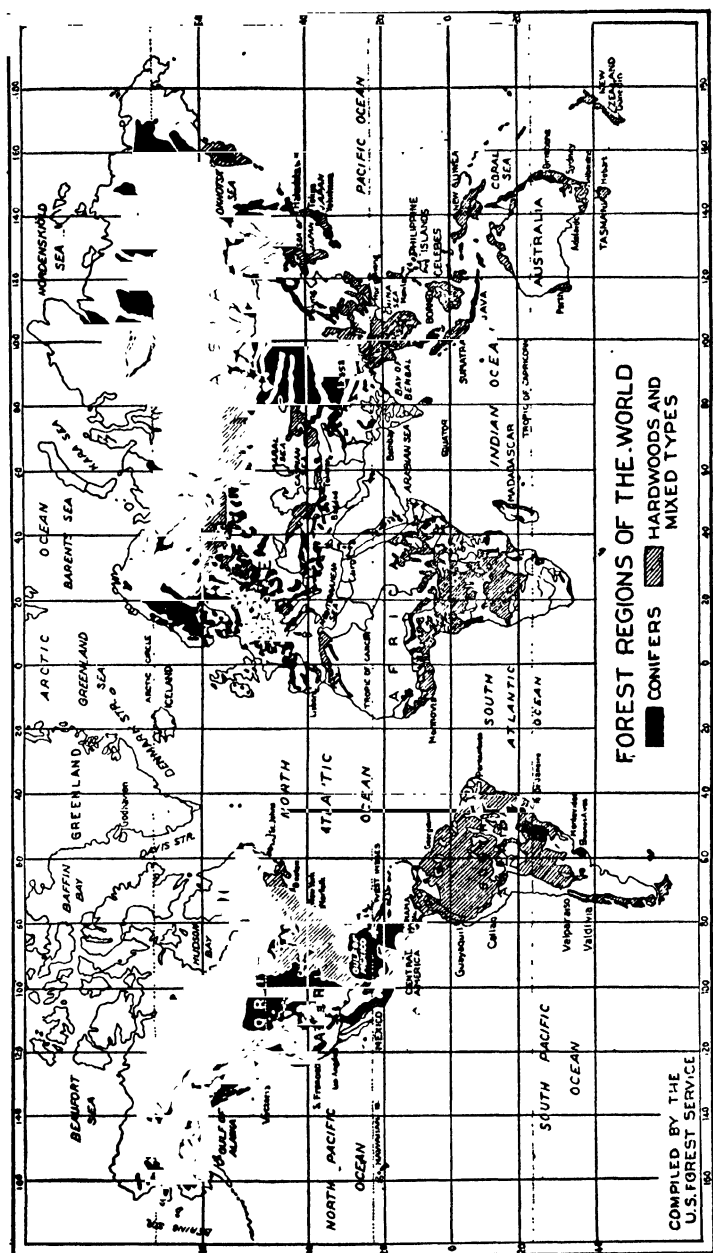


FIG. 20. FOREST RESOURCES OF THE WORLD

lumber, although there is some trade among the southern and western countries of this continent. Chile exports small quantities of lumber to Argentina, Bolivia, and Peru. Brazil ships Paraná pine to Argentina and Uruguay, and there is considerable trade in this commodity among the Brazilian coast cities. As with many other regions, lack of transportation prevents extensive development of the large resource of southern Brazil. A number of products, other than lumber, are supplied to world commerce from the South American forests.

The forests of Central America supply a few specialized products to international trade. Most of this section contains mahogany, which is exported to the United States, and sometimes reexported in semi-manufactured or in the completely fabricated forms to European countries; sometimes the trade between Central America and Europe is direct. Nicaragua contains rather extensive supplies of pine, in addition to mahogany and rosewood. For many years the logwood industry was one of the mainstays of Honduras, but the industry has declined recently, partly because of the substitution of synthetic for vegetable dyes, and partly because the accessible supplies have been largely depleted. The west coast of Africa also contributes certain products. This area produces a number of kinds of mahogany, obtained mainly from the French Ivory Coast, from the Gold Coast, and from southern Nigeria. As a rule, the African products are not of as fine quality as those cut from the forests of Central America, but they have some compensating advantages; namely, they are easily worked, their price is relatively low, and most of the wood is well-figured. Ebony is a product of tropical east and west Africa.

Lumber Trade of the United States

The nature of the timber supply affects the general character of the manufactures of a region. In those countries with a large and varied supply, manufactures have developed to make use of the raw materials. This is notably the case with the United States, which has a more important lumber-manufacturing industry than any other country. In times of average business the production of lumber in this country is upwards of 35,000,000,000 board feet, of which about 20 per cent is hardwoods. About half of this supply comes from the Southern and Pacific states. Upon the forest products have been built up industries which manufactured products valued in 1929 at \$3,500,000,000. This is, therefore, one of the major industrial groups of the country. By

far the greater part of this output enters domestic consumption. But the United States is a large exporter of all forms of commodities of wood. Shipments of saw mill products are sometimes in excess of \$100,000,000 a year, and the manufactures of wood between \$30,000,000 and \$40,000,000. This trade, along with others, suffered a severe setback during the depression years. The exports are not only sawed timber, boards, planks, and scantling, but cooperage, box shooks, veneer, hardwood flooring, trimmings and moldings, furniture of many kinds, handles for tools, woodenware, not to mention them all. Exports are sent to many European countries, to South America, and to some countries in Asia and Oceania. Japan usually takes more lumber from the United States than from any other country, although Canada and Asiatic Russia sometimes are important sources. A similar condition prevails for most kinds of lumber and timber imported into Australia.

On the other hand, partly because of the variety of our wood working industries, and partly because of the specific needs of certain American markets, this country is a large importer. The most important product is wood pulp, which in recent years, has amounted to upwards of \$80,000,000 annually. Saw-mill products are frequently valued at from \$35,000,000 to \$70,000,000. Canada is one of our chief sources of supply for timber products, but imports are brought from Central America, from the West Coast of Africa, from India, Siam and the Philippine Islands. Imports are of such commodities as mahogany, rattan, cabinet woods of various kinds, veneers and plywood, willow basketry, manufactures of bamboo, and various kinds of furniture woods.

Lumber Trade of the United Kingdom

With meager home supplies of timber, and with diversified industries which require considerable varieties of wood products, Great Britain is one of the chief European markets. In 1930, imports into the Islands of wood and wood pulp amounted to about \$186,000,000.

It has been said that "every producing country in the world contributes to the wood needs of the United Kingdom."² Tabulated statements of imports contain a list of more than twenty countries, each with a bill of over \$200,000 against Great Britain. The main sources of supply are Sweden, Finland, the United States, Russia, Canada, and Norway.

² Hugh Butler, "The United Kingdom," *Trade Promotion Series No. 94* (U. S. Department of Commerce), 1930, p. 160.

North Europe furnished the bulk of the soft woods used for house-building, joinery, the manufacture of boxes and packing crates, and also telegraph and scaffolding poles, and minor timber.

The United States is the principal source of hardwoods used in cabinet and furniture work, in the production of motor vehicles, musical instruments and flooring. The United States also supplies southern pine, Douglas fir, and western hemlock. This country is the principal source of Britain's supply of mahogany, obtained originally by producers in the United States from Central America and Africa, and manufactured into lumber, which is reexported. Canada ships to Britain spruce, white pine, birch and maple from the eastern Provinces, and Douglas fir, western hemlock and Sitka spruce from British Columbia.

Britain imports from the United States also a considerable variety of manufactured wood, such as desks, chairs, kitchen equipment, and from the continent, bentwood chairs and reproductions of period furniture. The United States exports tool handles, and various kinds of woodenware, sharing the trade in the latter with Germany.

Practically the whole supply of base stock for paper-making is imported. The main sources of woodpulp are Sweden, Norway, and Finland. Esparto, a grass used in the manufacture of paper, is obtained from Spain and North Africa.

Trade of France

Although her timber resources are not extensive, France manages to get along with imports which amount to less than half of those of Britain. In 1930 she paid about \$60,700,000 for imported woods, and \$23,400,000 for woodpulp. In fact, France is to some extent an exporter of wood products, but the character of such materials is different from the imports, consisting mainly of mine props and railway ties. The imports are of the choicer woods of large dimensions. The timbers which are grown in France are not varied enough to sustain much of an export business, nor to supply her varied manufactures. They consist mainly of pine, spruce, oak, poplar, elm, ash and beech.

The sources of French imports are varied. The greater part of the supply is brought from the continental countries, with Sweden, Germany, Switzerland, Finland, and Russia being the chief contributors. The United States supplies certain types of woods, such as southern pine of the long leaf variety, used for general construction, medium grade furniture, in the manufacture of agricultural implements,

wagons, and several wood specialties; Sitka spruce, imported also from Canada, used mainly in airplane construction; red gum and sap gum, used mainly for moldings and the cheaper grade of furniture; maple, black walnut, tupelo, cottonwood, and a few others.

Under favorable conditions French colonies would be able to supply large quantities of timber to the markets of the home country. The area of forests in French dominions is estimated to cover about 230,000,000 acres, mainly in Equatorial Africa. But hitherto the lumber exports of West Africa have gone to England, Germany, and a few other European countries rather than to France. Okoume exported from Gabon is used for interior work, floors, plywood and for the manufacture of cigar boxes.

In Asia, Japan is the chief factor in the foreign lumber trade. She imports Douglas fir and cedar from North America, mahogany, teak, ebony, and sandalwood from tropical areas, and poplar, used in the match industry, from Manchuria and Siberia. The chief exports are spruce, hemlock, red pine and oak. The export markets are mainly in the Asiatic regions, China, Chosen, and Manchuria. Japan is the seat of a considerable number of wood-using industries, such as woodpulp and paper, matches, toys, furniture, pencils, and construction timbers. Natural camphor still has a place in international trade. Formosa is the source of supply.

Surplus Producing Countries

The countries of north Europe are the principal exporters of timber products. The forest region covers a vast area stretching across the continent through Norway, Sweden, Finland, Russia, and on through Siberia toward the Pacific. The estimated forest area in Sweden is about 62,000,000 acres; in Finland, 50,000,000 acres; in Lithuania, Latvia, and Estonia together 8,800,000 acres; and in European Russia about 475,000,000 acres. In 1930 the exports of timber products from the seven countries named above was over \$390,000,000. Sweden ranked first in such shipments, amounting to \$146,000,000; Finland second, with \$93,000,000; and Russia third, with \$87,000,000. The greater part of this timber consists of pine and spruce, although in certain regions are rather large supplies of alder, aspen, oak and birch.

In most of these countries lumbering, and the related industries, are organized as a business not only for the supply of domestic markets, but more largely for foreign trade. The intention is to make the forests yield as large an income as possible. In fact, in most of these regions,

timber is the chief resource, and it has been deemed a wise policy to use the supply not only as a source of present income, but to conserve it as a permanent basis of wealth.

In Sweden, perhaps, this idea has been developed to a greater extent than in any other country. Here, it is recognized that the future of the people depends to a large extent upon the conservation of the timber supply. Conservation has become a part of national policy. Although about two-thirds of the timber resources are privately owned, the owners cooperate through various boards, institutes, and committees to maintain, and possibly to increase, the productive power of the country. They have succeeded so well that the present increment of timber is virtually equal to the cut. In fact, the timber corporations regard conservation as more profitable than indiscriminate lumbering.³ Thus, according to a report of our Department of Commerce: "Several of the large Swedish corporations engaged in pulp and paper production, lumbering, and other activities have long since determined that systematic timber growing is profitable in spite of necessarily long-term investment, and there is a growing tendency on the part of these concerns to view this work as absolutely necessary, for the possibilities of buying more forest land are restricted, while the demand for timber is constantly growing. Such companies regard timber raising as an industry in which the chances of profitable return are not at all uncertain."⁴

As a rule, in Sweden, the method of reproducing forest areas is either to leave seed trees standing, and to assist the new growth by getting rid of the humus, or by cutting the stand clean and sowing or planting.

Some thirty years ago the people of Sweden reached a decision as to future policy—whether they would cast their lot with agriculture or with forestry. The decision was relatively easy because much of the land area which is suitable for the growing of trees is too infertile for successful agriculture. Thus the people virtually decided to grow and harvest trees instead of devoting attention to agriculture.

The great importance of this northern area is the result of a number of circumstances. This region is near the greatest import markets in the world; both producers and consumers are well-supplied with transportation, through inland and ocean channels; for the most part, the kinds of timber produced in the north supplement those produced in

³ Lippincott, *Economic Resources and Industries of the World*, 1929, p. 454.

⁴ E. Kekich, "Forestry in Sweden," *Trade Promotion Series*, No. 56 (U. S. Department of Commerce), 1927, p. 19.

other portions in Europe, and to some extent in consuming countries outside the continent. The rise of diversified industries, notably since 1880, and the greater draft on timber supply in all countries to supply new needs, has made necessary added supplies from outside sources. A notable feature has been the rise in demand for pulpwood and paper.

Trade in Woodpulp and Paper

Paper is made from a number of materials, but rags and wood are the mainstay of the business. The higher grades of paper are made from rags. When wood is the raw stuff, the timbers mainly in use are spruce, pine, fir, hemlock, and poplar, although others are sometimes employed. The pressure of need has no doubt supplied the incentive for some other materials than rags. At any rate, with the huge demands of modern times, the older materials could not supply the demand, except at much higher than prevalent prices. The use of wood stocks solved the problem.

The early inventions which laid the basis for commercial manufacture dated back to about 1870. The sulphite process was perfected about 1885. And from this time, pulp papers appeared in the markets in larger quantities. Materials which enter trade are sometimes in the form of the various woods used in manufacture, sometimes as pulp, and sometimes as paper. Exporting countries usually deal in all three commodities. The chief exporters are Sweden, Norway, Finland, and Canada. The Canadian product comes mainly to the United States as newsprint (\$126,200,000 in 1930) and as woodpulp (\$37,200,000 in 1930). The exports of the northern countries of Europe are more widely distributed. The United States is an importer, chiefly of woodpulp from Norway, Sweden and Finland, but some newsprint is also imported. Most of the countries of Europe, and some others over the world, are also consumers of the northern materials.

Other Forest Products

Timber products from other regions would enjoy a larger foreign trade if conditions were favorable. The chief difficulties are lack of skilled labor to cut and prepare timber for market, the inaccessibility of many regions, and, in some instances, the great distance to market.

The forests of the world, however, supply other products than lumber. South America may serve as an illustration. Quebracho grows in the native state in various portions of Argentina, Paraguay, and in Southern Brazil. This wood is the source of a valuable tanning material.

Formerly, the logs were exported, mainly to Germany and France. But at present the practice is to manufacture the extract locally, although certain quantities of logs are still exported. In 1930 Argentine shipped extract worth \$10,700,000, and logs valued at \$2,600,000. About one-fourth of this trade was with the United States, the balance with certain European countries.

Yerba mate, in Brazil *herva matte*, is a natural product in southern Brazil, in portions of Paraguay and North Argentina. The leaves and small twigs, when properly prepared, serve as a kind of tea. There is a considerable trade in this product among certain countries of South America, and to some extent with Europe. The Brazilian export in 1930 amounted to about \$10,200,000. Brazil is also an exporter of carnauba pine—used in the manufacture of shoe-blackening, and in the production of candles when mixed with a small percentage of beeswax. This country also exports large quantities of Brazil nuts. Venezuela, among others, ships considerable quantities of tonka beans used in the manufacture of perfumery and as a flavor for chewing tobacco. This country also exports *divi-divi* and mangrove bark, sources of valuable tanning materials.

Certain regions of South America supply to international commerce coconuts, tagua nuts (vegetable ivory), coca (the source of cocaine), balsa wood, ipecac and sarsaparilla. Kapok is obtained from some regions although the chief supply comes from Java, India, and portions of Africa.

Rubber, obtained from the native forests, chiefly in Brazil, is one of the most important forest products. Until the rise of the plantation industry in Malaya about 1900, Amazonia was almost the only source of supply.

Small amounts of rubber were shipped from the province of Para as early as 1827. The Brazilian industry received the benefits of the demand arising from the discovery of methods of vulcanizing rubber, and not only did Para make larger shipments, but other regions also became exporters. Meanwhile, new sources were opened in the basins of the Madeira, the Purus, and other tributaries of the Amazon. With the acquisition by Brazil of the territory of Acre from Bolivia, and with the development of transportation on the upper Amazon, this new territory became an important producer. In 1912 the output of Amazonia was 45,000 tons, of which the Brazilian regions contributed the greater part.

Since that date, Brazilian production has suffered more and more from the growing competition with plantation rubber. Although located at a great distance from the chief consuming market, namely, the United States, plantation producers of Malaya have advantages with which producers in Brazil cannot compete. The eastern companies have invested enormous sums not only in plantations, but in labor-saving equipment which reduces costs. They have much more ample supplies of labor, and their business organization is much more effective than that of Brazil, partly because it has been ordered on a prearranged plan, instead of the natural arrangement such as exists in Latin America.⁵

Rubber is produced in most of the Central-American countries, but the amount is small. The one factor which seems to stand in the way is high labor cost. The basic wage is much lower in the Middle East. Small quantities of rubber are produced in a number of regions in Africa, including the British, French, Portuguese, and Belgian colonies. The continent contains a number of varieties of wild rubber which have been made the basis of some industry.

There are many kinds of rubber-bearing products, each of which is used in some specialized way in industry. Chewing gum is usually produced from the latex of chicle, but it is sometimes obtained from a mixture of chicle and jelutong, and even of other rubber-like substances. The tree from which chicle is obtained grows wild in Yucutan, British Honduras and Guatemala. These regions are still the chief sources, but other substances which differ in composition from chicle, and which are used as components in the manufacture of chewing gum, are obtained from the tropics of the Middle East, from Venezuela, the Guianas, Colombia and the Amazon valley.

Although gutta-percha is sometimes considered a rubber product, the botanical relationship is not the same, and it serves different industrial purposes. The substance was introduced into Europe in 1843. A few years later, Dr. Werner von Siemens suggested its application as an insulator for submarine cables, a use which now absorbs much of the product. But it also enters industry in many ways. The chief sources are Malaya, Sumatra, Borneo, Java and the Philippine Islands. The industry is largely in the hands of the natives, but Chinese merchants control the marketing of the product.

Balata, another rubber-like substance, is produced chiefly in the northern part of South America, including the Orinoco regions of

⁵ Lippincott, *Economic Resources and Industries of the World*, 1929, p. 418.

Venezuela, the Guianas, and portions of Brazil, Colombia and Bolivia. One of its most important uses is the manufacture of waterproof belting.

Dozens of other products of the forests find their way into international trade. With individual items the amounts are often small, but the aggregate of all substances is large. In this class are palm oil, sandalwood, lac, and cutch. In addition there is a long list of by-products of the lumber industry which enter commerce in various forms, such as wood distillates, tanning extracts, ethyl alcohol, producers gas, oxalic acid, plastics, and needle oils. These are objects of both domestic and foreign trade. The United States, for example, exports turpentine and rosin to countries of every continent.

Market Organization

The passing of lumber from mills to ultimate consumers scattered throughout the world requires a definite organization for making the necessary contacts. Here, as in other lines of industry, the channels of trade are by no means fixed, nor are they unchanging. Sometimes one, sometimes another, method is employed, according to circumstances. In some instances, lumber is sold direct from the mill to foreign agents or buyers, who undertake to sell the commodity to other dealers who pass it on to the final consumer. This means that the foreign middleman always has a number of customers who look to him as their source of supply. In this respect he organizes the consumers' market and stands as contact man between mill and final user.

Selling is a separate function and requires a specialized organization to handle the work. Since only a few mills are able to handle this kind of business, this function is performed by export middlemen who dispose of products to foreign clients, usually brokers, who handle the trade for their own customers. In the hardwood business, lumber is often shipped on consignment. Occasionally where the volume of sales warrant the process, American lumber is sold through branch selling and distributing offices. In Europe the business is usually handled by brokers, who establish contact with various grades of dealers. The specific market organization is often determined by local conditions. But, at any rate, the purpose for which the organization exists is to bring together mills and scattered buyers.

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CHAPTER XXI

THE GRAIN TRADE

Wheat and rice are the most important cereals which enter international trade, although large quantities of other grains are produced, mainly for domestic consumption. The United States, for example, often produces more than 2,500,000,000 bushels of corn—sometimes more than 50 per cent of the world total—but rarely ships abroad as much as 50,000,000 bushels. Likewise with oats, of which this country usually produces more than 1,000,000,000 bushels, or from 20 to 25 per cent of the total for the world, the annual export is usually less than 15,000,000 bushels. Similar conditions prevail in other countries, although a few corn and oat producers export a larger proportion of their crop than the United States does.

Wide Distribution of Cereals

In practically every part of the world, cereals of some description are an important element in the people's diet. This has been the case at least from the dawn of history. But custom, taste, economic and geographic conditions, have fixed some rather than others in habits of consumption and as a result, the various regions grow as much as possible of their favorite grain.

Wheat is the most widely distributed. It is a product of practically every country in Europe, including the northern nations where, in fact, an usually high yield is obtained, as in Sweden from thirty to thirty-five bushels per acre, and in Norway from twenty-five to thirty. Most Latin-American countries are producers, and this is the case also with a number of regions in Africa, particularly with those countries which have come under the domination of some European power. Wheat is grown in Algeria, Tunisia, Morocco, Egypt, and the Union of South Africa, among others. Asia, China and India produce large quantities; even in Japan, where rice commands a higher place in consumption, the output is sometimes in excess of 30,000,000 bushels.

Oats are also a common crop in many parts of the world, but the distribution is not as wide as that of wheat. Rye and barley are more

largely European crops, although these cereals also are produced elsewhere. The millets should be added to the list of minor cereals. There are a number of varieties, including the great millet or Guinea corn, and bulrush millet. This cereal is a staple food in India where rice is not readily available, and it is consumed in parts of China and Africa. Millet is also used as fodder in some parts of the world. Sorghum is a cereal grass which is cultivated in warmer countries. The juice of the stalk is a source of sugar.

The fact of wide distribution does not signify that all producers are exporters. The chief importance of domestic production is that it relieves a region to some extent of dependence on the outside world, although in some countries even the small producers are occasional exporters. But surplus production as an established business is a feature of only a few nations.

Production of Wheat

For food purposes, wheat is the world's leading cereal. Certain primitive kinds were consumed before the dawn of history and man has never abandoned its use. Instead, he has gradually improved the quality, increased the yield, diversified its character, and has otherwise made it more adaptable for the various uses of consumption. The annual production throughout the world in 1930 was over 4,800,000,000 bushels.

The great value of wheat for bread-making purposes is that its gluten is composed of two proteids, gliadin and glutenin, which impart to the flour its real bread-making properties. In addition, its high food value is a strong point in its favor. Further, a much larger number of products can be made from wheat flour than from that of any other cereal; it is thus splendidly adapted to the baker's art. The readiness with which the plant adjusts itself to soil and climatic conditions adds greatly to its utility. And besides its genuine merits for food and culinary purposes, the market has gradually built up around it a prestige value, and the consumption has come to be considered one of the indices of an advancing standard of living.

Wheat adjusts itself rather readily to changes in environment. But its character is affected by the nature of the soil, by climatic conditions, and by hybridization. It follows from this that there are a number of varieties.

The temperate sections of both the northern and the southern hemispheres are the greatest producers, with Argentina and Australia being the chief sources south of the Equator. Wheat is grown in the higher

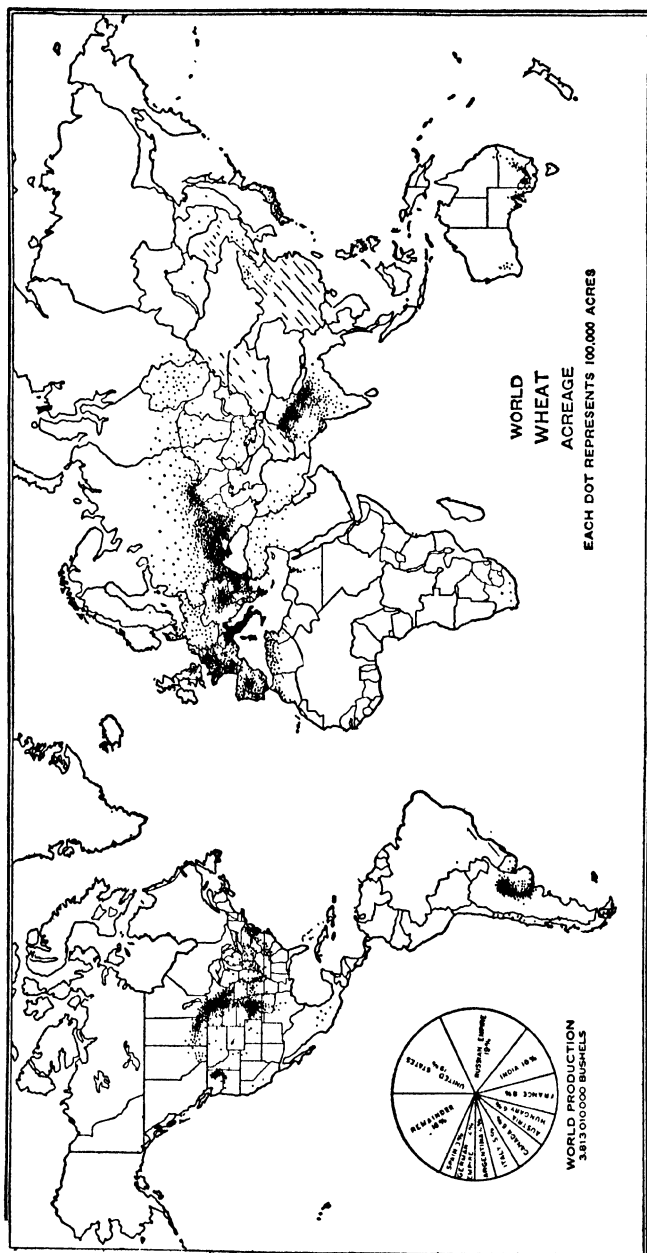


FIG. 21. WORLD CULTIVATION OF WHEAT

altitudes in a number of the South American countries, such as Peru, Bolivia and Ecuador. Within recent years cultivation has pushed far north into Canada, into regions where it was once supposed the plant would not grow successfully. Because the crop is produced in so many parts of the world, and under such a variety of conditions, the harvest is in progress somewhere practically the year round.

There are a number of classifications of wheat and each usually serves some specific purpose. Some varieties are planted in the fall, some in the spring. Soft winter wheat, a fall variety, is produced in the eastern portion of the United States, in western and northern Europe, and in some sections in the southern hemisphere. Hard winter wheat comes from the Rocky Mountain and Mississippi river sections of the United States, and from southwestern Europe. Hard spring wheat is a product of western United States, western Canada, and eastern Russia. This does not exhaust the varieties, but is sufficient to indicate the kinds of this cereal which appear on the market. The class *Triticum sativum* is the ordinary variety, but there are a number of divisions and subdivisions which include the more common names, such as emmer, spelt, durum wheat, and club or square-head wheat. Polish wheat is a distinct form. As with other commodities, great care must be taken by the miller in selecting and preparing his cereal in view of the kind of flour which he intends to deliver to the trade. The same care must be exercised in grading the flour. The demand has become highly specialized with respect to the kind of product the baker wishes to produce, whether it be bread, crackers, pastry, or macaroni. Thus flour must be adapted to the particular needs of consumers. In addition, blends of flour, which are demanded by certain markets, affect the demand for wheats, and of course, react upon the international trade which is responsible for delivery of the supply.

While some twenty or more countries produce an appreciable amount, the greatest volume of production is in the United States, Russia, India, Canada, France, Italy, Argentina and Australia. These countries produce from 70 to 80 per cent of the world total, determined largely by weather conditions. Production and acreage in 1931 is shown in the table.

While there is a considerable amount of trading among the countries, the great volumes of supply are exported from the surplus producers—the United States, Canada, Argentina, Australia, Russia—with much smaller quantities from Hungary, Roumania, and sometimes from India.

The table given below does not include China. With respect to this country Mr. Julian Arnold says in a publication of our Department of Commerce: "There are millions of Chinese who do not eat rice, and who probably have never seen rice. The population of North China, including that of Manchuria, is not for the most part rice-eating. These people produce and consume wheat, millet, corn, beans, and sweet potatoes, as the main part of their diet. Other parts of China, even to the extreme southern portions, consume wheat flour, and the quantities consumed are constantly increasing."¹ There is no reliable information relating to the production of this cereal in China, but Mr. Arnold states that the annual crop varies from 200,000,000 to 600,000,000 bushels. In view of the large consumption in the Far East, as well as in many other parts of the world, wheat is by all odds the world's most important cereal.

WHEAT: WORLD PRODUCTION AND ACREAGE: 1931²

COUNTRY	ACRES (Millions of Acres)	BUSHELS (Millions of Bushels)
United States	55.3	894
Russia	73.5	694
India	32.2	347
Canada	26.1	304
France	12.5	270
Italy	12.1	248
Argentina	16.0	226
Australia	14.5	189
Germany	5.4	156
Roumania	8.6	135
Spain	11.2	134
Yugoslavia	5.4	99
Poland	4.5	83
Hungary	4.0	73
England and Wales	1.2	36
All others		400
Total	—	4,288

¹ J. Arnold, "China," *Trade Promotion Series*, No. 38 (U. S. Department of Commerce), p. 69.

² *Commerce Yearbook*, 1932, Vol. II. (U. S. Department of Commerce), p. 667. Figures for Russia are 1929; figures for all others estimated.

WORLD WHEAT CALENDAR

SEEDING

MONTHS

HARVESTING

United States, Canada, and Europe Spring Wheats.	JANUARY	New Zealand, Chili
United States, Canada, and Europe Spring Wheats Argentina, Chile, Uruguay, Siberia, Manchuria, Australia.	FEBRUARY	Upper Egypt, India
United States, Canada, and Europe Spring Wheats. Argentina, Chile, Uruguay, Siberia, Manchuria, Australia, New Zealand (winter wheat)	MARCH	Lower Egypt, India, Syria, Cyprus, Persia, Asia Minor, Mexico, Cuba
	APRIL	Algeria, Central Asia, China Japan, Morocco, Texas.
	MAY	
Argentina, Chile, Uruguay, Australia.	JUNE	Turkey, Greece, Italy, Spain, Portugal, South of France, California, Mississippi, Alabama, Georgia, North Carolina, South Carolina, Tennessee, Virginia, Kentucky, Kansas, Arkansas, Utah, Colorado, Missouri
Argentina, Chile, Uruguay	JULY	Upper Canada, Rumania, Bulgaria, Austria, Hungary, South of Russia, Germany, Switzerland, South of England, New England, New York, Pennsylvania, Ohio, Indiana, Michigan, Illinois, Iowa, Wisconsin, Southern Minnesota, Nebraska.
Argentina, Chile, Uruguay, New Zealand (Spring Wheat)		
United States, Canada, and Europe (Winter Wheat) North Africa	AUGUST	Manitoba, Western Canada, Columbia, Belgium, Holland and Great Britain, Denmark, Poland, Central Russia, Oregon, Washington, Central and Northern Minnesota, Dakota
United States, Canada, and Europe Winter Wheats North Africa, Southern India	SEPTEMBER	
United States and Europe Winter Wheats	OCTOBER	Scotland, Sweden, Norway, North Russia
	NOVEMBER	South Africa, Santa Fe, Manchuria
Northern India	DECEMBER	Argentina, Australia.

Source:- Data from Broomhall's Corn Trade Year Book 1931.

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FIG. 22. WORLD WHEAT CALENDAR

Foreign Trade

The total amount of wheat, and of flour in terms of wheat, which moves in international trade is between 700,000,000 and 800,000,000 bushels annually. This represents a large value and causes the wheat and flour trade to be one of the most important items in international commerce. In view of the fact that there is a considerable amount of reexport business, and that certain countries, which are not normally surplus producers, export certain quantities of specialized kinds of the cereal, some twenty or more countries are engaged in the trade. We may summarize the foreign trade as follows:³

WHEAT: WORLD TRADE (INCLUDING FLOUR IN TERMS OF WHEAT) 1931
(1,000 BUSHELS OF 60 POUNDS)

	EXPORTS	IMPORTS
Principal Exporting Countries		
Canada	267,365	243
Australia	143,295	
United States	131,536	19,059
Argentina	120,510	
Hungary	18,425	2
Rumania	14,793	
British India	10,197	10,618

The trade of the principal importing countries is shown below:⁴

WHEAT: WORLD TRADE (INCLUDING FLOUR IN TERMS OF WHEAT) 1931
(1,000 BUSHELS OF 60 POUNDS)

	IMPORTS	EXPORTS
Principal Importing Countries		
United Kingdom	230,900	10,064
Italy	86,235	2,628
France	66,943	22,128
Belgium	48,244	3,110
Netherland	36,830	1,428
Germany	30,853	825
Brazil	30,708	
Japan	25,343	7,953

³ *Commerce Yearbook*, 1932, Vol. II, p. 668.

⁴ *Ibid.*, p. 668.

The percentage of our total wheat crop which enters the export trade has been declining rather steadily since about 1897. On the average, for the five years ending 1901, it was about 31 per cent. For a brief period, during the war years, exports of wheat, including flour in terms of wheat, amounted to about 30 per cent of domestic production. But the figure has declined almost steadily since that time. For the five years ending 1931, it was about 20 per cent.

This probably represents the trend for some time to come. For one thing, the opening of greater grain areas elsewhere has greatly increased competition in overseas markets. Production in Canada has increased

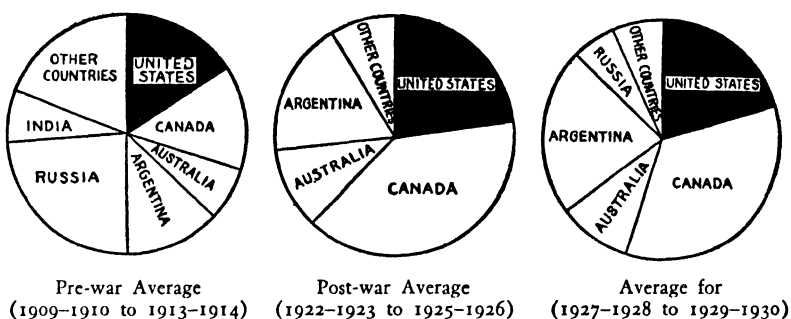


FIG. 23. CHANGES IN THE SOURCES OF THE WORLD WHEAT MARKET

notably in the last twenty years. The outlook is for further development and for expansion of Canadian export business. As an average, during the years from 1909 to 1913, the acreage in production was about 9,900,000; it was 24,900,000 in 1930. Production during the first period was about 197,000,000 bushels, and in 1930, 421,000,000 bushels. Since domestic consumption is relatively small compared with the United States, a foreign market must be found for the increasing surplus. In fact, the percentage of the crop exported has been steadily increasing. Moreover, Canada has by no means reached her capacity for production. Similar conditions prevail in other surplus-producing countries although not to the same degree as in Canada.

Another factor bearing on the export trade is the tendency of the larger European importers to protect domestic producers with higher tariffs. This is particularly the case with a few nations which are themselves large producers. Apparently, the purpose is not only to protect farming classes, but to spread the available demand for labor. Even with Britain, since the abandonment of the "corn laws" in 1846, the tendency

has been to return to a measure of protection, at least in the form of Imperial preferences, and sometimes proceeding beyond such measures. Since Canada and Australia are within the fold of the Empire, such arrangements work to their advantage.

Although not bearing directly on the export problem, the apparent decline in per capita consumption of wheat in the United States does at least indirectly have an export aspect. The average per capita consumption in the United States in the years from 1909 to 1913 was 5.317 bushels; in 1929 it was 4.438 bushels. While the amount was higher in 1930 (5.252 bushels) it is too early to decide whether this marks the beginning of a reversal of the tendency.

Although the United Kingdom affords the largest market for American wheat, considerable quantities are shipped directly to France, Netherlands, Belgium, Germany, and Italy; and a rather large volume of the American product finds its way indirectly into some continental country, often as re-exports from Belgium and Netherlands. In like manner, at certain seasons of the year, a certain volume of American wheat seeks the European markets by way of Canadian ports. Such exports originate principally at Chicago and Duluth, and take a northern route by way of Georgian Bay ports to Montreal.

To some extent the customary destination of wheat exported from Argentina and Australia differs from that of the United States and Canada. Argentina, for example, enjoys a considerable trade with Brazil, which is one of her largest customers, and with Portuguese and Spanish possessions. The greater portion of Australian export is destined for the United Kingdom, but other European countries are also importers, and in addition considerable shipments are made to Japan, to the Union of South Africa, Egypt, and New Zealand.

Trade in Flour

The importing countries usually prefer to take their bread stuffs as grain rather than in some of its manufactured forms. As a result, the commerce in wheat is of much more importance than that in flour. Sometimes the purpose of this policy is to add to the opportunities for home industries and labor; but upon occasions it is to enable importing countries to manufacture brands of flour which are most acceptable to home consumers.

The proportion of export of wheat and flour varies from country to country. In the case of the United States, in 1930, flour represented about 41 per cent of the combined exports of wheat and flour; with Canada

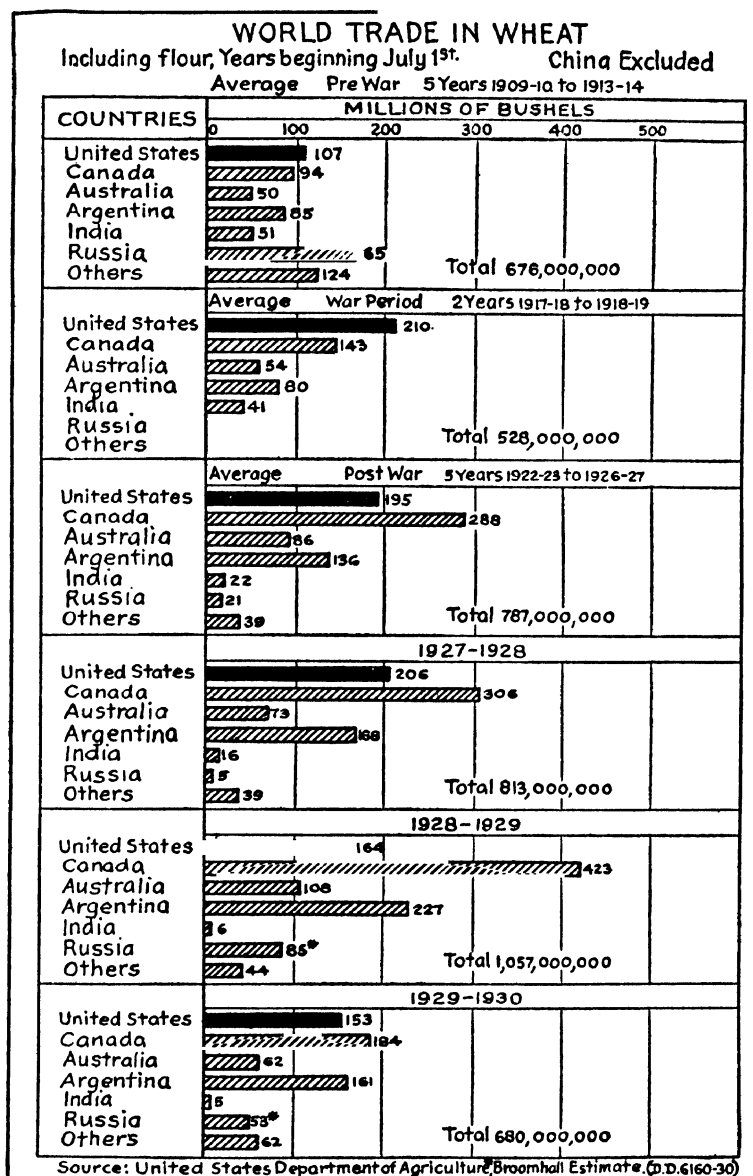


FIG. 24. WORLD TRADE IN WHEAT INCLUDING FLOUR, YEARS BEGINNING JULY 1ST. CHINA EXCLUDED

it was about 17 per cent; and with Argentina about 7 per cent.⁵ Shipments of flour from the four leading exporters is shown in the table below:

EXPORTS OF FLOUR FROM CERTAIN COUNTRIES (1929-1932)
(1,000 BARRELS)

COUNTRY	1929	1930	1931	1932
United States	13,663	13,060	9,654	
Canada	11,406	7,894	7,218	5,414
Australia	5,753	4,752		
Argentina		1,173	969	

The larger portion of American flour goes to market in Europe, with Britain being the largest consumer. But considerable supplies are shipped to our Latin American neighbors, near and far, and some flour is exported to the Orient. It might be said in passing that not a little of the exported product is milled from Canadian wheat which is brought into this country for the purpose of blending with our own. Australian flour moves chiefly to British markets, but Egypt, Italy, Japan, France are among the importers.

British Markets

The United Kingdom is the greatest import market in the world for flour and grain. With the free trade which prevailed after the repeal of the corn laws, British farmers found difficulty in competing with producers in newer areas, particularly after the development of the type of transportation which made possible cheap delivery of grain. The great commercial organization built up in some large surplus-producing countries enabled dealers to assemble stocks of grain from many thousands of producers and make delivery promptly to dealers, and ultimately to consumers, not only in Britain but in other consuming countries. In addition, grain being sometimes used as ballast has enjoyed a favorable freight rate to distant markets.

During the last twenty years, the acreage devoted to wheat in England and Wales has never exceeded 2,000,000 acres, and production is usually less than 60,000,000 bushels—far below the consumption requirements of the people. Only about 3,000,000 acres are used for oats. The

⁵ The conversion ratio 4.7 bushels of wheat to a barrel of flour are used in these calculations. Cf. *Statistical Abstract 1932*, "Australian flour exports as of 1929-1930," etc., p. 663.

islands do not produce corn, yet consume considerable quantities.

In recent years, about half the supply of wheat has been imported from the dominions, chiefly from Canada and Australia; of the countries outside the Empire, the United States and Argentina are usually the main sources; Russia sometimes exports sizable amounts to Britain, and other nations contribute to the supply.

Oats is about the only grain which has been able to hold its own in the British Islands. Although the acreage is not large, production is more widely diffused than that of any other grain. Imports are received mainly from Argentina, the United States and Canada. Barley is used for stock-feeding, milling, malting, and in the provender trade, and local production is much less than requirements. Since British distillers use a great deal of California barley, a considerable amount of this grain is imported from the United States, but imports are also obtained from Canada, and from the Danube region, with Russia often making material contributions. Corn is imported mainly from Argentina, with smaller quantities from the Union of South Africa, the United States and Roumania. It is used as a feed for livestock and poultry, but certain amounts are manufactured into foods.

Unlike the minerals, wheat-producing lands are not vanishing resources. By proper care they may be made to produce crops continuously. In fact, in the older parts of the world, the land has been cropped for centuries, and yet it continues to maintain a large population.

Notwithstanding the fact that the population of the world is growing, and the percentage of wheat-eaters, as compared with the numbers who eat rye, corn, etc., is constantly increasing, there is no present indication that economy will be forced on us in the near future. One interesting feature of the present wheat-growing industry is that a very large part of the world's supply now comes from countries which have a relatively small yield per acre. This is due partly to the fact that many growers are working relatively poor land on a large scale with power devices. But a more important reason is that a large percentage of the world's wheat is still produced under a system of extensive cultivation. To what extent the output may be increased by more intensive methods is shown by the high yields in some European countries. Yield, of course, is partly a matter of weather conditions, but in spite of such changes, man has succeeded in extracting much more from some areas than from others. The highest average yield per acre in the United States in recent years was seventeen bushels, obtained in 1915; but ordinarily the figure is about fourteen bushels. In England and Wales, and in Germany, the

yield is usually in excess of thirty bushels, and in France it is often more than twenty bushels.

Moreover in many parts of the world it is not only possible to increase the yield but also to enlarge the acreage. Some regions in western Europe seem to have reached their limit both as to acreage and yield, and no great expansion is possible in the wheat belt of the United States although the yield may be substantially increased. But in this country there is still the possibility of reclaiming much land by irrigation and drainage, by further development of drought-resisting crops, and by producing cereals on some abandoned lands.

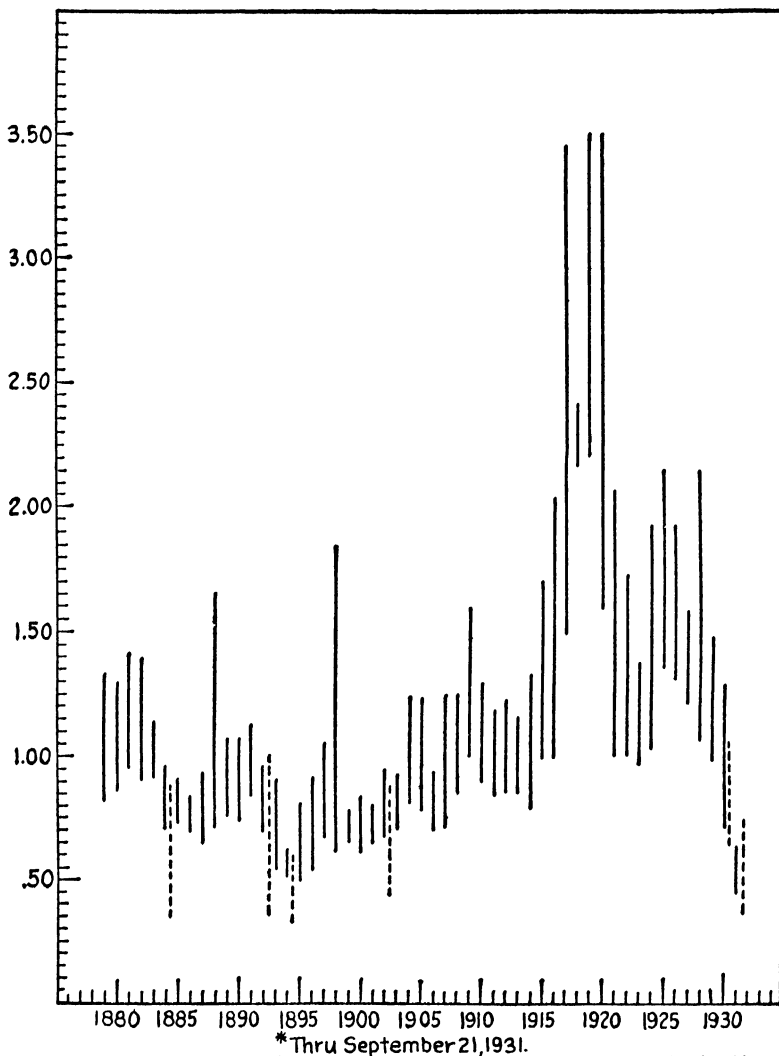
Expansion is possible in other parts of the world. There are still large undeveloped wheat lands in the temperate portion of South America, which at present are used for cattle-raising. The prospective wheat-growing areas include large tracts in Canada and in northern, eastern, and southern Africa. Portions of China and Siberia will eventually produce much larger crops of wheat than at present, and additions may be made to the growing area of Australia by use of irrigation. Thus the world has by no means exhausted its potential wheat-producing capacity. The rise of prices, and subsequent protective measures, have caused a revival of interest in wheat in England, although at the expense of the consumer, and wheat could be grown profitably in other portions of the world if only prices were higher.

Rice

As an international commodity, rice is of far more importance in Far-Eastern countries than in those of the West, although some European nations are rather large consumers of the commodity.

The early history of rice is wrapped in about as much mystery as that of wheat. It was cultivated at a very early date in India, where it was probably indigenous, and was introduced thence into Persia. The introduction in America seems to have been by accident. In 1694 a vessel from Madagascar, bound for Liverpool, was driven from its course and put in at Charleston for repairs. A small quantity of the grain obtained from the captain was used for seed purposes. Cultivation was so successful that within a few decades production became one of the chief industries of the colony. In early years, cleaning and polishing was done by hand; but in time, mills operated by horse, or by ox-power, or by the tides, were introduced.

There are possibly as many varieties of rice as of wheat, but the range of cultivation is much more limited with the former grain. As a rule,



Source: Grain Futures Administration of The Department of Agriculture
and The Official Reports of The Chicago Board of Trade.

FIG. 25. SPOT WHEAT PRICES ON THE CHICAGO BOARD OF TRADE SHOWING
HIGHS AND LOWS FOR YEARS 1879 TO 1931
DOTTED LINES SHOW TIMES CORN HIGHER THAN WHEAT

growing is determined by conditions of temperature and of water supply, although some varieties of rice do not require irrigation.

Regions of Rice Production

Rice is essentially a crop of the tropics and subtropics. China is probably the largest producer, but it is impossible to know with any degree of certainty even the approximate output. Unofficial estimates for 1917 were 70,000,000,000 pounds, and for 1923, 50,000,000,000 pounds. British India ranks next, followed usually by Japan, French Indo-China, Java and Madoera, Chosen (Korea) and Siam. But some half a dozen other countries produce considerable quantities. Production in 1931 is shown in the table below.⁶

RICE: PRINCIPAL PRODUCERS; 1931 (MILLIONS OF POUNDS)
1909-1913

COUNTRY	AVERAGE	1931
British India	64,144	73,405
Japan (proper)	15,787	17,346
Indo-China (French)	7,332	8,700
Java and Madoera	6,433	7,539
Chosen (Korea)	3,293	4,999
Siam	4,258	3,160
Philippine Islands	1,213	2,928
Taiwan (Formosa)	1,413	2,352
Brazil	90	1,426
United States	660	1,256
Madagascar	896	1,056
Total	105,519	124,167

In addition to the countries named above several European nations produce small quantities, mainly Italy and Spain.⁷

Production in the United States has continued to increase since its first introduction. Cultivation is no longer confined to the Carolinas. As a matter of fact, this is now the least important of our four producing districts. The Texas-Louisiana region usually produces more than half the output. Rice is produced also in Arkansas and California.

For most regions of the Far East, rice is the great cereal, as wheat is

⁶ *Commerce Yearbook*, 1932, Vol. II, p. 672. Production for Brazil and the Philippines is for 1930.

⁷ Italy in 1931 produced 30,920,000 bushels, and Spain 13,040,000 bushels.

in America and most of Europe. In fact, in 1931, the output in the Orient, including China, was about 90 per cent of the world total, while the western world produced about 75 per cent of the total wheat.

International Trade in Rice

In normal years about 10 per cent of the rice grown in the world enters international trade, as compared with from 20 to 25 per cent for wheat. British India is the largest exporter, the markets being chiefly

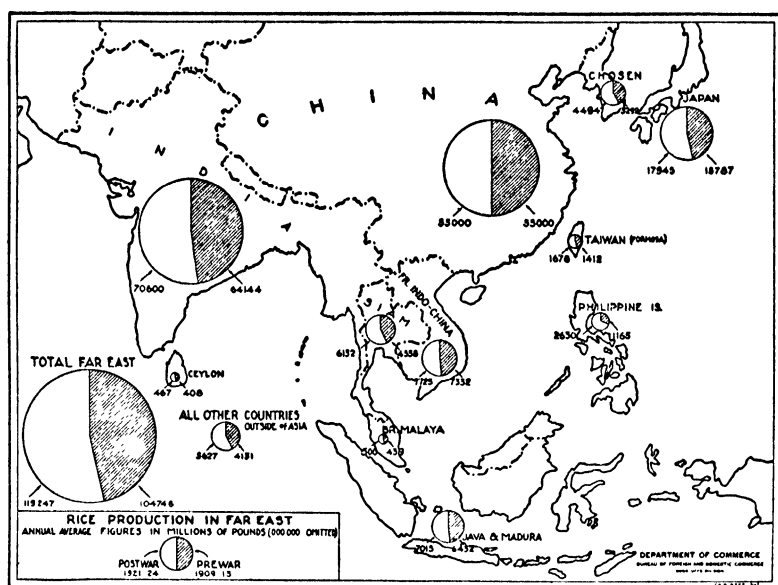


FIG. 26. RICE PRODUCTION IN THE FAR EAST

in the Far East. The United States and Italy export sizable quantities, and there is considerable reëxport business among a few European nations. This trade is shown in the table on page 354.⁸

As with wheat, rice is consumed chiefly as a food, and in many populous parts of the world, the supply must be carefully conserved. As compared with other cereals, this product is deficient in protein and fat; it is therefore necessary to add other foods to balance the diet. This is done in China and Japan with the consumption of beans and legumes.

In these countries economy prescribes that as much as possible of

⁸ *Commerce Yearbook*, 1932, Vol. II, p. 672.

RICE: WORLD TRADE; 1930 (MILLIONS OF POUNDS)

PRINCIPAL EXPORTING COUNTRIES	EXPORTS	IMPORTS
India (British)	5,862	160
Siam	2,281	...
Indo-China	2,252	...
Italy	468	13
United States	259	28
PRINCIPAL IMPORTING COUNTRIES	IMPORTS	EXPORTS
China	2,652	4
Malaya (British)	2,106	490
Netherland India	1,385	27
Ceylon	1,079	
Germany	550	159
France	534	190
Cuba	443	
Japan	397	97
United Kingdom	254	14
Netherlands	242	216

this plant be turned to some account. Rice straw is consumed as fodder for stock; it serves also as a material for thatching, bedding, mats, ropes, bags, sandals, not to mention all uses. Rice flour and meal, which are rich in carbohydrates, are converted into stock feeds, and starch is manufactured from the grain. In some Far-Eastern countries, rice is a raw material for the manufacture of liquors, such as sake in Japan and tapuy in the Philippine Islands.

Maize

Indian corn is grown widely over the world, but compared with wheat and rice only small quantities enter international trade. For one reason or another, human beings prefer other grains. Thus, corn is used mainly as a feed for livestock. In recent years, however, with the development of the corn-product industries, increasing quantities of this grain are converted into hominy, canned corn, breakfast foods of many kinds, glucose—used to mix with table syrups, jams, and jellies—and various lubricating oils; these are among the exports.

As we have indicated on a former page, the United States is the largest producer of corn, but only small quantities are exported. Argentina, on the other hand, is a large exporter, sometimes shipping more

than 150,000,000 bushels annually. Upon occasions the exports greatly exceed this amount.⁹ Corn is an export from Roumania, Yugoslavia, Hungary, and the Union of South Africa, but the aggregate for all these countries scarcely averages more than 100,000,000 bushels a year. As an average, for the four years ending with 1930, the United States shipped 20,400,000 bushels, and in 1931 only 2,700,000 bushels. On the other hand, when prices and shipping conditions are favorable we import small quantities, as in the five years ending with 1930 when the average amount was 1,800,000 bushels.

Corn ranks far below wheat in bread-making qualities, but, in a number of places, it is consumed in one way or another as a food. In our country we are familiar with corn bread, brown bread, corn-meal mush, and various other articles prepared in deceptive ways. The Mexican tortilla is produced from a thick corn-meal paste pressed by hand and baked in an oven, or on a hot stone slab. Italians consume polenta, a product of corn meal, and in Roumania, mamaligha is made from the same raw material.

In the United States corn finds its chief use in feeding and fattening livestock. In this country, the great consumption of meat and dairy products, and a large export trade in certain of these commodities, stimulated stock-raising and the growing of corn, which is one of the chief feedstuffs. Packing industries, and the related manufactures of by-products, are now largely localized in, or near, the corn belt. Another factor in the importance of corn in this country is that it has been used more largely in the feeding of animals than in any other region. In Argentina, for example, the livestock industry was built up largely on alfalfa, although corn feeding is growing in importance. In some regions in Europe certain by-products, as those of the sugar beets and potatoes, are used as animal feeds.

As with wheat and rice, there are many varieties of corn. Some mature within two months, others require six or seven. Some have large kernels, others small. The grains of these many varieties differ in color—white, red, yellow, and purple, being some of the distinguishing marks. Naturally, the physical and chemical qualities vary with the kind of corn. Some more common varieties are flint, which is cultivated in Canada, in the northern part of the United States, and in general, in the colder part of the temperate climates; dent corn, comprising the varieties which are usually grown in the United States;

⁹ Cf. *Commerce Yearbook*, 1932, Vol. II, p. 348. Shipments in 1930 were 183,800,000 bushels, and in 1931, 384,500,000 bushels.

sweet corn, which is usually a garden product, served on the cob, or used as a raw material by canners; and pop corn, a familiar article of trade. The original variety grown in America at the time of Columbus was a soft corn. The grain was small and round, and was easily pounded in a mortar. It is evident from the table given below that corn is essentially a North American product.¹⁰

CORN: ACREAGE AND PRODUCTION; 1931

	ACRES (MILLIONS OF ACRES)	BUSHEL (MILLIONS OF BUSHEL)
United States	105.1	2,563
Argentina	14.5	268
Roumania	11.7	247
Brazil	7.0	200
Yugoslavia	5.9	126
India	6.5	97
Italy	3.5	78
Java and Madocra	4.7	77
Mexico	7.9	76
Egypt	2.1	76
Hungary	2.7	60
Union of South Africa	5.7	58
All others		363
World total ¹¹	—	4,289

Oats

As already indicated, this grain is of small importance in international trade. But large quantities are grown in a few countries for domestic use. The output of the United States in 1931 was 1,112,000,000 bushels. In Europe the chief producers were Germany, France, Poland, the United Kingdom, and Russia. Other countries produce small amounts, except that very little of this grain is produced in the southern hemisphere.

Other Cereals

The peoples of the world make use of a considerable number of other grains, such as rye, barley, buckwheat, and millets, but with few exceptions these products are consumed in regions where they are

¹⁰ *Commerce Yearbook*, 1932, Vol. II, p. 671.

¹¹ Russia not included. Figures for Brazil are 1930.

grown. European countries are the chief producers of rye, with Russia usually reporting nearly half of the total for the world. Considerable quantities are also grown in Germany and Hungary. This grain is consumed largely as a bread stuff in Russia, Scandinavia, and in parts of Germany, and it serves the same purpose to a limited extent in other countries. In some regions, rye bran and ground rye are fed to cattle. Only small quantities are produced in the United States.¹²

Marketing of Grain

The task of bringing together innumerable producers and consumers of cereals is a more comprehensive undertaking than with any other commodity. The type of organization which performs this work varies from region to region, depending largely on the volume of grain which moves into the channels of trade. In some places, the contact between farmers and millers is direct, that is to say, without the intervention of middlemen; but in countries which market large quantities, this procedure is the exception rather than the rule.

In Britain, certain amounts of threshed grain are bought direct by millers, malsters, brewers, and others, but the greater part of the crop passes through various middlemen. Corn agents, for example, obtain "samples of grain from farmers and dispose of the supplies to larger merchants dealing with millers." A charge is made to the farmer for finding the market. Then, there is the corn merchant who plies his trade in districts where there is a large output of grain. Sometimes this merchant sells seed to farmers. Other factors in the market are the corn and agricultural merchants who form the largest and "most important group of intermediaries dealing in British farmers' grain. These merchants buy any kind of grain from farmers or their agents, and in return sell feedstuffs, fertilizers, and all kinds of agricultural supplies, including seed."¹³ In at least one instance, there is a coöperative milling society which sells the grain of its members.

Finally the distribution of home-grown grain is effected on the "corn exchanges," which are "factors' rather than farmers' markets." A somewhat different procedure is followed with imported grain. These organizations usually deal "with the shipping business, as well as with imported grain, and are the importers' primary market. These port grain exchanges do not handle British grain unless intended for export. The Baltic Grain and Shipping Exchange in London is the

¹² *Commerce Yearbook*, 1932, Vol. II, p. 669.

¹³ Hugh Butler, "The United Kingdom," *Trade Promotion Series No. 94*, (U. S. Department of Commerce), pp. 461-462.

official headquarters of the London Corn Trade Association. The Association, in addition to its other activities, has a clearing house to facilitate the passing of documents, the settlements of contracts, and the clearing or adjustment of prices between the successive buyers and sellers concerned in a series of transactions in the same lot of grain. The whole arrangement is designed to facilitate direct settlement between the first sellers and the last buyers. For most of the business however, the documents pass direct, and business is done chiefly by private trading."¹⁴

In the United States, with its vast volume of grain passing from farmers to final buyers, and with only a small amount of foreign business, the organization is somewhat different. The initial process of assembling grain for further sale is usually performed by grain elevators which are located at convenient places in the producing regions. Thousands of these organizations are in existence in the United States. Some are operated by independent companies, usually local in interest and management; others are owned by commercial line elevator companies, that is to say, by groups which have no interest in production, but whose chief function is the collection and further disposition of the grain.

The product thus assembled is shipped to terminal markets, the most important of which are in Chicago, Duluth, Minneapolis, Omaha, Milwaukee, and St. Louis. The dominant elements in these markets are the elevator companies which purchase grain from country buyers, elevators, and commission firms. The grain passes from these terminal markets into the hands of millers or into the foreign trade. As with the marketing of other staples, the route to market is not standardized. Here and there along the line dealers may step in to tap the supply of grain on its way from farmer to ultimate consumer.

The ultimate price-making process operates on Boards of Trade, Merchants' Exchanges, or by whatever name these organizations may be designated. The exchange itself does not buy and sell; it is an association of dealers who establish a place of trade, fix the rules, and provide the facilities for carrying on the business of buying and selling.

The objects of the Chicago Board of Trade are stated to be: "To maintain a commercial exchange; to promote uniformity in the customs and usages of merchants; to inculcate principles of justice and equity in trade; to facilitate the speedy adjustment of business disputes; to acquire and to disseminate valuable commercial and economic in-

¹⁴ *Ibid.*, p. 462.

formation; and, in general, to secure to its members the benefits of coöperation in the 'furtherance of their legitimate pursuits.'¹⁵ Any body of traders who are formed into an organization might state their purposes in almost the same language. But whatever the purpose, they serve as the focal point for an immense number of transactions by which innumerable scattered sellers are enabled to dispose of their products to ultimate buyers. Thus any market is made up of parts which function more or less perfectly to direct commodities through the channels of trade.

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¹⁵ *Fifty-fourth Annual Report of the Chicago Board of Trade, Rules, By-laws, etc.*, p. 9.

CHAPTER XXII

TEXTILE FIBERS: COTTON

Textile fibers are among the most important commodities which enter international trade. The money value varies from year to year, depending on the price of the raw materials and the volume of consumption, but the aggregate value is always large. In the case of cotton, in 1929, the foreign bill of the six leading importers was about \$1,163,500,000, and even with the shrinkage due to the depression it was \$463,200,000¹ in 1931. The reason for the high rank in trade of such commodities will be clear after a moment's thought. Regardless of the stage of industrial development, the occupations which provide food, clothing, and shelter are always the most important, and to-day the textile fibers are the main raw materials for the production of clothing of all descriptions.

Kinds of Textile Materials

The textile industries include not only the manufacture of clothing, but a considerable range of other industries into which the arts of spinning and weaving enter. Carpets, rugs, table wear, matting, tapestry, and ornamental objects of many kinds. The word "textiles" refers to all objects woven on a loom, and the process may be applied to hundreds of different kinds of things. With the primitive weavers "the ground of the future stuff was formed by a number of parallel strings called the warp, having their upper ends attached to a horizontal beam and drawn taut by weights hung from their lower ends. . . . The strings of the weft were interlaced at right angles to those of the warp, and the combination of the two formed the woven stuff or web." Originally a hand process, weaving, except with the backward peoples of the earth, is now a machine industry and the progress of invention has enabled the manufacturer to work most intricate designs into the fabric, and to apply the weaving process to operations which were once thought to be consigned forever to hand workers. Thus it happens that practically any material which will hold its form after

¹ United Kingdom, France, Germany, Italy, Czechoslovakia, Japan.

having been interlaced is an actual or potential commodity for the weaver.

Weaving is one of the oldest of the arts. In fact, it was an industry among primitive people, usually the labor of women. The art was improved during succeeding ages; weavers learned methods of manipulating fibers, of improving devices to aid hand labor, and of working designs into fabrics. Among many people, almost at the dawn of history, there are records of high attainment in this art, characterized by the ability to produce fine material, and by skill in design and ornamentation. Wool and linen seem to have been the earliest materials, because they were relatively easy to work; but occasionally, the artisan worked in strands of gold, and of other substances as an aid in improving the appearance of the commodity. That weaving is a relatively simple process, is attested by the work of primitive people to-day who make use of practically any kind of substance which is pliable enough to yield to the efforts of the worker.

The ranking materials for the present textile industry, at least as it has developed among the industrialized nations, are cotton, wool, flax, silk, and if we include the baser textiles we should add jute, hemp and sisal. In some countries textiles are made from manufactured fibers, as with rayon. Some people have learned the art of splitting coarse strands of vegetable products, and these serve as a material for the making of cloth, lace, and a limited number of fabrics. This list is by no means complete, because industry makes use of many kinds of fibrous materials.

We may give several examples. The pineapple and the coconut palm produce useful fibers; coir, a product of the latter, is produced by soaking the husks in water until they are soft enough to work, and then separating and drying the threads. The mass contains several qualities of material; the straight fibers are manufactured into rope and coarse thread, and into cocoa matting, while the stiffer material is used for the manufacture of matting. Pineapple fiber is often of local importance in the production of rope, cordage, and fabrics; occasionally, native workers develop considerable skill in these industries. In 1931 Madagascar exported over 6,300 tons of raffia. It is used by the natives in making coarse cloth, but as a material of commerce it is consumed in the manufacture of mats, basketry, and of various kinds of ornamental work. Java is one of the chief sources of kapok or silk cotton. Over 18,700 tons of this commodity were exported from Netherland India in 1931. In the same year the United States imported over 7,800

tons. Ecuador was the original home of the Panama hat; but the industry has now spread to other countries, including Colombia and Venezuela. The workers use as their raw material the leaf of a palm. The fiber is carefully separated from the tender leaf and bleached either in the sun or in a weak solution of lemon juice, and worked up slowly into the Panama hat.

Industry makes considerable use of Spanish moss in the manufacture of upholstery, of bamboo split into fine strips for basketry and brushes, of ramie or China grass for cordage, and in some European countries for the production of fabrics, and this says nothing of the consumption of straw of rye, wheat, barley, broom corn, rice, and esparto in the production of a considerable variety of goods, such as hats, rope, matting, brooms, upholstery, etc. In 1931 the United States imported over 153,300 tons of these minor industrial fibers, and in years of active business the consumption is much greater. The imports include istle or Tampico fiber, Manila fiber, New Zealand fiber and sisal, not to mention all kinds of imports.

The commerce in textile fibers is one of the largest items in international trade. In normal times imports of cotton, wool, and silk into the leading countries is over \$2,000,000,000 a year; since this means sales by producers, this staple contributes liberally to the building up, or the maintenance, of the agricultural industry in the countries which are leading producers of cotton. Moreover, the export of this commodity often provides a substantial part of the purchasing power among the exporters, with which they make foreign purchases, discharge debts, or pay for some of the invisible services which have been rendered by entrepreneurs of other nations.

Cotton, at least as a leading commodity, is a relatively new item in international trade. It began to make its appearance on a large scale about 1800, with the United States as the leading source of supply. From that date to 1860 the foreign shipments increased just about one hundred fold, measured in pounds, and nearly forty times in value.

The rise of cotton as a textile fiber was a direct result of the invention of Whitney's cotton gin in 1793. Prior to that event, manufacturers of this continent had imported supplies from the Dutch settlements in Surinam, from Jamaica, and other parts of the West Indies, but the quantities were always small. In England, as late as 1760, the manufacture of cottons was rated as "amongst the humblest of domestic arts." Wool, flax, and hemp, provided the chief textile ma-

terials. But the possibility of using cotton on a large scale was fully realized. The greatest difficulty in the way was the slow, laborious process required to eliminate the seed. This was notably the case with Upland cotton, in the production of which the United States had the greatest advantage. The roller gin which had been employed for some time with the Sea Island variety could not be used. Separation had to be done by hand, and even the most rapid worker was fortunate to clean a few pounds a day. With the invention of textile machinery in England, and with the growing use of steam power, it became all the more necessary to find a device which would gin cotton quickly. Whitney's gin laid the foundation for the modern industry involving cotton-growing and manufacture. The gin produced almost immediate effects on the production of cotton in America. The output in 1790 was about 4,000 bales and in 1860 3,800,000 bales.

Importance of Cotton

In all its ramifications, cotton probably affects the lives and welfare of more people than any other commodity. It is one of the greatest articles in international trade, and thereby it made necessary an extensive organization for handling, storing, transporting, and financing the commodity. Not only does its production give occupation to millions of people throughout the world, but other millions are involved in fabricating finished materials, in making machinery for the industry, and in marketing the finished products.

In our estimate of the importance of cotton we should include its service to the consumer. This cheap and abundant substance has made possible a wide diffusion of consumption with all this signifies for comfort, convenience, and welfare. It serves these purposes more thoroughly than either wool or silk.

The utility of cotton as a textile is based on several conditions: It is cheap; it can be produced on an extensive scale in many parts of the world; practically all the processes, from fields to ultimate consumers (except harvesting) are susceptible of mechanical handling; the nature of the fiber, being a flattened cylinder, adapts it readily to the spinner's art. Due to the fact that the strands readily "kink" together it is possible to make a strong and durable thread. The value of cotton as a commercial crop is greatly enhanced by the fact that it can be grown in many regions of the earth in large quantities under organized systems of agriculture.

Kinds of Cotton

The quality of cotton varies greatly from place to place. It is not always of the same grade even on adjoining fields; but marked differences exist among the products of different parts of the world. American cotton is chiefly short staple, and since the American variety is more largely consumed than the product of any other country, this signifies that world spinners make greater use of short staple cotton than of any other type of material. American Upland cotton may be from .75 to 1.3 inches long, but Carolina and Georgia Sea Island cotton may run 1.8 inches and Barbados about two inches. Indian cotton is short staple—from .5 to 1.0 inch—and the Chinese product is still shorter. Egyptian cotton averages from 1.2 to 1.5 inch.

The Egyptian product is fine and strong and is used in the manufacture of knit goods, sewing thread, fabric for automobile tires, and for mixing with other cotton. Cultivation under more modern conditions began in Egypt about 1820. The cutting off of the American supply during the Civil War gave the industry its first real incentive to growth. While the area in which the crop can be grown is limited, conditions are suited for success, although much of the crop must be irrigated. Practically all cotton-manufacturing countries use some of the Egyptian variety, but as a rule, Great Britain takes about half the supply.

Cotton grows in the natural state in some places in Peru, but this country has developed its own variety, which is "so soft and fine that it is called vegetable wool; it is much used for weaving underwear, stockings, etc., with wool which it even improves, as the cloth is less liable to shrinkage. . . . (This plant) holds out well through drought, requiring but one irrigation yearly."² The staple is from $1\frac{1}{16}$ to $1\frac{1}{8}$ inches long.

The yield of cotton per acre varies greatly from region to region, depending on natural conditions, and upon the skill in cultivation. In the crop year 1931-1932 the yield in Egypt was 352 pounds per acre, which greatly exceeded 'that of any other cotton-growing country. Moreover, this yield has been relatively stable over the last twenty years—a condition which does not prevail elsewhere. The acre in the United States, in 1931-1932, produced 201 pounds, but it was as low as 146 pounds, as an average, for the five years ending 1925-1926. Over the last twenty years the yield in India has ranged from sixty-nine to

² Annie S. Peck, *Industrial and Commercial South America* (Thomas Y. Crowell Company, New York, 1927), p. 786.

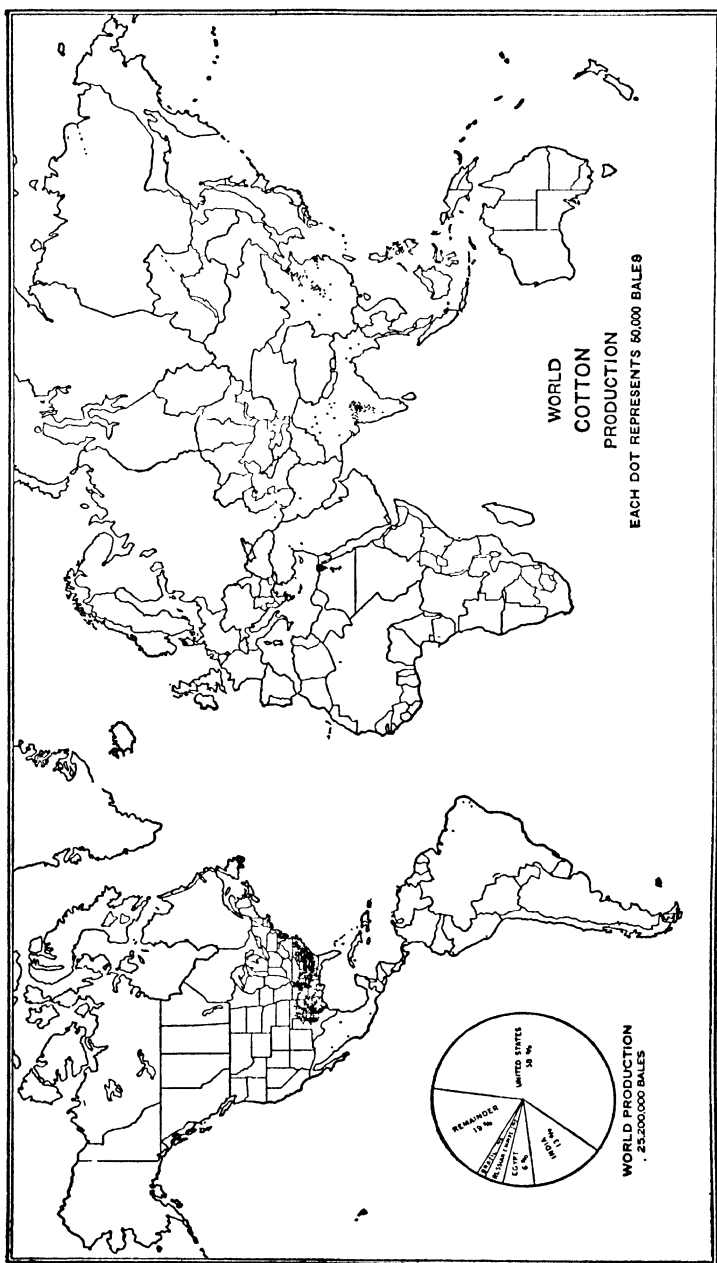


FIG. 27. PRODUCTION OF COTTON IN THE WORLD

ninety-one pounds. The poor showing of this country is due largely to careless methods of cultivation. In the central and southern portion the seed is planted in lines, and planters make some effort at careful farming, but in northern India the seed is broadcast, often mixed with other crops, and little or no attention is given to it from the time of sowing to harvest. With greater care India could greatly increase her output. As a rule, the lint is too short and coarse for use in British mills, but Japan, Belgium, Germany, and Italy usually take some of the product of the Indian farmer.

In China conditions are about as unsatisfactory as in India. Because of the small size of farms, improvement is extremely difficult. The country is hampered, also, by lack of transportation, high taxes, and lack of means of diffusing information about better methods of production. Much of the cotton is consumed in the regions of growth by small household manufactures. The Chinese have had great difficulty in adjusting American cotton to growing conditions in their country.

The Production of Cotton

The output of the leading countries is shown in the table given below.³

PRODUCTION OF COTTON (THOUSANDS OF BALES OF 478 POUNDS NET)

	1909-1910 TO 1913-1914 AVERAGE	1921-1922 TO 1925-1926 AVERAGE	1931-1932
United States	13,033	11,516	17,096
India	3,585	4,523	3,401
China (Commercial crop)	695	2,021	1,800
Egypt	1,453	1,361	1,287
Russia	905	306	1,900
Brazil	387	568	570
Peru	106	203	4
Mexico	187	184	207
Uganda	20	107	170
Sudan	14	46	204
Argentina	2	61	106 ⁵
Others (Estimated)	513	604	759
Total	20,900	21,500	27,500

³ *Commerce Yearbook*, 1932, Vol. II, p. 682.

⁴ Figures not available.

⁵ Figures for 1930-1931.

For many years the United States has produced over half the total for the world. In some periods the percentage rises much above this amount, as for the crop years 1909-1910 to 1913-1914, when the average was over 62.4 per cent. This signifies that the great consuming countries of Europe have looked to America as their main source of supply. In recent years, Japan has become a large consumer of this cotton. The world output varies greatly from year to year, depending largely on weather conditions, but production is also affected by social and economic changes. Nevertheless, from 20,000,000 to 25,000,000 bales are required annually to satisfy the needs of the leading consuming countries. Production throughout the world in 1931-1932 was estimated at 27,500,000 bales.

A notable feature of the cotton-growing industry is the rapid rise in importance of several regions which hitherto have not been regarded as cotton-producers. In Argentina, for example, the acreage devoted to this crop increased from about 5,000 to 315,000 in the period from 1909 to 1931; in Brazil the increase was from 887,000 to 1,614,000 acres; in Uganda from 58,000 to 876,000 acres, and in the Sudan from 44,000 to 336,000 acres. These changes cannot be regarded as temporary; they indicate an intention on the part of producers in these areas to obtain a larger share of the world's cotton trade. Much of this progress has been made in the face of unfavorable conditions, such as the need of years of experimentation, occasional low prices, and with some countries, a long haul to market. But, in most instances, the period of experimentation is over, and cotton-growing has been established on a firm footing.

All this, of course, has an important bearing on the future of American cotton. In the case of some of the newer producers, there are great opportunities for the further extension of the acreage, and what is needed more than anything else, if this is to take place, is a higher level of world prices for cotton. Thus, if American cotton is to hold its old relative position our domestic policy must be handled with great care. Cotton is produced in more than forty countries.⁶ In most cases the output is small, and is consumed locally, but under favorable conditions, production could be greatly expanded.

Consumption of Cotton

The United States is not only the greatest producer but also the greatest consumer of cotton. But, at that, the requirements of domestic

⁶ *Yearbook of Agriculture*, 1933, p. 477.

mills are usually less than half what the fields produce. The disposition of cotton in the United States is shown in the following table:⁷

COTTON IN THE UNITED STATES: SUPPLY AND DISTRIBUTION: 1927-1931
(IN 1,000 BALES)

YEAR	PRODUCTION	IMPORTS	TOTAL ⁸ SUPPLY	CONSUMP- TION	EXPORTS	STOCK ON HAND AT END OF YEAR
1927 ..	12,783	338	16,883	6,834	7,540	2,536
1928 ...	14,297	458	17,291	7,091	8,044	2,312
1929 ...	14,548	378	17,238	6,106	6,690	4,530
1930 ...	13,756	108	18,394	5,263	6,760	6,370
1931 ...	16,629	132	23,131	4,866	8,708	9,678

The greater part of the American exports are destined for consumption in about six countries in Europe. Germany, the United Kingdom, and France are the largest importers, but considerable quantities are taken by Italy, Spain, Belgium, and Netherlands, and smaller amounts are distributed to other continental nations. In Asia, Japan is the largest consumer, but China often takes large quantities. The total exports of American cotton to Europe in 1931-1932 was about 5,000,000 bales which was about 20 per cent less than usual. Apparently, Japan and China are becoming larger importers. Shipments to both countries in the year just named were the largest in the history of the trade—2,300,000 bales to Japan and 1,100,000 to China. The textile industry in both these nations is expanding, and Japan has developed a large trade in the Far East in textile fabrics.⁹

The manufacturing nations also draw a part of their supplies from India, Egypt, and to a smaller extent from other producing countries. Britain usually takes more than half the Egyptian export; the balance is distributed among about a dozen countries of which the United States, France, Italy, and Germany are the most important. As a rule Japan consumes about half the Indian exports, and in more recent years China has become an important consumer of this product. But considerable shipments are made to a few of the nations of Europe. The price differential between American and Indian cotton is some-

⁷ *Commerce Yearbook*, 1932, Vol. II, p. 551.

⁸ Including carry over.

⁹ Cf. *Commerce Yearbook*, 1932, Vol. II, p. 551, Exports of cotton yarn from Japan in 1930 were 23,600,000 pounds, and of cotton tissues 1,578,000,000 yards; in 1929 Japan shipped abroad 1,790,000,000 yards.

times a deciding factor in the relative quantities of American and Indian cotton imported into Europe.

Receipts of cotton from all sources by the leading importing nations are shown in the table given below.¹⁰

COTTON: IMPORTS BY PRINCIPAL NATIONS (1,000 BALES)

COUNTRY	1910-1914	1931
	AVERAGE	
United Kingdom	4,143	2,172
Germany	2,142	1,645
France	1,440	1,664
Japan	1,405	2,777
Italy	902	791
Czechoslovakia	(¹¹)	450
Belgium	663	358
Poland	(¹¹)	282
Netherlands	277	215
Canada	155	209
Switzerland	113	123

British Cotton Trade

Several important factors characterize the British cotton trade. One is the effort of the cotton manufacturers of the United Kingdom to encourage the development of cotton-growing within the Empire. This movement was begun in 1902 with the formation of the British Cotton-Growing Association. This organization was incorporated in 1904 as a non-profit making enterprise, with a capital of £500,000. Although the main purposes are the same, some changes have taken place in the form of the organization. In 1921 some of the functions were taken over by the Empire Cotton-Growing Corporation, which was brought into existence under royal charter. By the terms of the Cotton Industry Act of 1923, a levy of 6d was placed on each bale of cotton consumed in the United Kingdom, and the proceeds were used for carrying out the purposes of the Act. The law was to continue in force for five years; but when the five year period expired a voluntary levy was continued at the rate of 3d per bale.

The following statement contains an appraisal of the effects of these measures and a forecast of what might be expected under favorable conditions: "Evidence of the developments recorded in post-war years

¹⁰ *Commerce Yearbook*, 1932, Vol. II, p. 683.

¹¹ Figures not available.

is contained in the fact that whereas the amount of cotton grown in new Empire fields in 1921 totaled 165,200 bales of 400 pounds, in 1925 the production was 366,700 bales, advancing to 439,300 bales in 1926. For 1927 the yield was 369,600 bales, and while the actual results in number of bales were somewhat disappointing, it is extremely satisfactory to know that the industry had successfully stood the test of the combined effects of poor crops and relatively low values. For the 1927-1928 season the market values of American futures had allowed for considerable higher prices being paid for the crops, resulting in an extended area of cultivation."¹²

The significance of such movements lies not only in what they have accomplished, but in what they prophesy for the future. Apparently, what is needed for further progress is a higher world price level, the same condition which is required in Argentina, Brazil, and elsewhere. Thus, there are some indications that the future may see considerable shifts in the world's sources of supply of raw cotton.

What all this has in store for British cotton manufacturers is another question. In this case, it is a matter of competition in the outside markets for the sale of the excess of British mills. And new competition is appearing on the horizon. India and China, which were once profitable markets, are developing factory manufacture, and Japan has already reached a stage where she can supply large quantities of fabricated cottons to the outside world. The United States is a party to this contest only to a limited extent.

An important contrast between the British and American markets is that the latter's are mainly at home, while, in the case of Britain, external sales are necessary for the maintenance of the industry on its present level. Thus, it has been said, "the prosperity of the British cotton-manufacturing industry depends on its ability to export from 80 to 90 per cent of its production of woven goods, while the cotton mills in the United States are able to sell between 85 and 95 per cent of their output in the domestic market."¹³

Among other things, this signifies that a large part of the cotton which enters the United Kingdom as raw material is exported again as fabricated product. The future of Britain as an importer of the raw stuffs is dependent to a large extent on her success as an exporter of manufactured goods. The reverse condition exists in the United States, where the foreign market for finished goods is of relatively small im-

¹² Hugh Butler, "The United Kingdom," *Trade Promotion Series No. 94*, p. 264.

¹³ Butler, *op. cit.*, p. 303.

portance, but foreign purchases of raw cotton are absolutely necessary for the maintenance of cotton-growing on its present scale.

At present, cotton is grown in more than forty countries.¹⁴ In most cases the amounts are small, and are used chiefly for local purposes. But there are possibilities of a great extension of acreage in some regions. The international trade is now largely supplied from the United States, India, and Egypt. The exports from the United States have been given on a former page. In the last twenty years, shipments from Egypt have rarely exceeded 1,600,000 bales, and this probably represents the approximate productive capacity of the country. Over this same period, exports from India have amounted to from 2,100,000 bales to 3,200,000 bales. But smaller amounts are contributed by a number of places. In 1929, for example, after enumerating in detail imports into Britain from America, Egypt, and India, the list contained shipments of 342,000 bales from "sundry" sources.

Other Products of Cotton

The cotton plant contributes several other commodities which may be considered as more or less by-products of the industry. Linters are short fibers which adhere closely to the seed of American Upland and Indian cotton; they are bought and sold in the international markets. This product has a number of uses, such as a raw material for paper-making, celluloid, artificial leather, plastics, and explosives. Large quantities of linters are consumed in the United States, and there is a considerable export. In recent years, Germany has been the principal importer, but shipments are made also to the United Kingdom, France, Belgium, and small quantities to other countries.

The cotton seed is also the source of a number of useful by-products, which are consumed largely for domestic purposes, but which also enter foreign commerce. Included in this list are cotton-seed oil, cake and meal, and hulls.

The manufacture of oil from the cotton seed, at least on a large scale, is a relatively new industry. It began in the United States about 1876, and grew rapidly. The industry quickly developed one of the great characteristics of many modern enterprises by finding uses for the by-products. Thus the cake remaining after pressing oil from the seed is ground into meal which serves as cattle-feed and as a fertilizer; the impurities and coloring matter which are worked out in the process of refining are called "cotton-oil foots," and are used in the production

¹⁴ *Yearbook of Agriculture*, 1933, p. 474.

of some kinds of soaps; hulls are used as fuel, and in the manufacture of some kinds of paper. In 1931-1932 the United States produced 847,000 tons of oil, 2,402,000 tons of cake and meal, and 1,511,000 tons of hulls. Similar producing industries exist in other countries which are large producers of cotton, and all of these enjoy some trade in the products of the cotton seed. Such shipments are made from Egypt, Argentina, Peru, Brazil, and occasionally from India and China. The United States is one of the largest exporters. Shipments of oil-cake and oil-cake meal are made chiefly to Denmark and Germany, and of cotton-seed meal to many countries, but the United Kingdom and Germany are the chief consumers.

Trade in Cotton Goods

The chief exporters of such commodities are the United Kingdom and Japan, and some of the leading industrialized nations of continental Europe. Britain has dominated this business for over a century, but at present, she encounters serious competition from a number of sources. In the development of this trade she has enjoyed a number of advantages. Her extensive commercial organization, world wide banking facilities, and means of ocean transportation, have stood her in good stead in entering the markets of the world. In addition, she has had the advantage of an extensive colonial market which at all times has been one of the mainstays of her trade.

In recent years, competition has come not only from the leading manufacturing countries, but from dozens of others who have been eager to encourage local industries, usually behind tariff walls. It is evident from what has been said in this chapter that the whole cotton textile industry of Europe, with the exception of some of the Russian enterprise, is dependent on imported raw materials. Throughout the continent there is an extensive home market, but mill capacity has been extended beyond the needs of domestic consumers, and foreign markets are necessary to consume the surplus. Six or eight continental countries are striving for foreign customers far and near, and some have built up a considerable external trade. They regard such sales as necessary for the national welfare, partly because it diversifies and enlarges the demand for home labor, and partly because it establishes buying power abroad for the commodities which they must import.

Although British exports of cotton goods exceed those of the four leading continental countries combined, the foreign trade has declined during the last twenty years. Exports of cotton piece-goods in 1913 were

6,580,000,000 square yards and in 1928, 3,866,500,000 square yards. Whereas there has been some loss in practically all markets in which Britain is accustomed to sell, the decline has been greatest in the Far East where Japanese mills have made "serious inroads in the British trade, not only with British India and China but also with other Far Eastern markets."¹⁵ The distribution of British trade in cotton piece-goods is shown in the table.¹⁶

DISTRIBUTION OF BRITISH EXPORTS OF COTTON PIECE-GOODS: 1913 AND 1928
(THOUSANDS OF SQUARE YARDS)

MARKET	1913	1928
Europe	729,860	457,348
Asia	4,090,442	2,092,233
Africa	629,993	504,558
Oceania ..	195,991	173,576
North America	298,067	146,261
South America	515,752	334,869
Other countries	119,933	157,748
Total	6,580,038	3,866,593

In 1931 the export of piece-goods amounted to 1,716,249,000 square yards. Various manufactures of cotton are exported from a number of continental countries, but Germany, France, Italy, Belgium and Czechoslovakia are the most important traders.

Marketing of Cotton

The basic problem in the marketing of cotton is of the same nature as that of selling grain, or any other commodity where producers are widely scattered and must dispose of their products to ultimate anonymous consumers. This problem is to devise an organization which will establish contact between the many thousands of persons who are sellers and those who buy. Marketing arrangements undergo change with development of industry, usually becoming more complex as business expands; but the tendency is more and more to establish regular channels of trade through which various buyers and sellers may make contact. Thus, no matter how distant, or how scattered, producers may be, they may dispatch their products over regular routes. The composition of an organization varies from country to country,

¹⁵ Butler, *op. cit.*, p. 292.

¹⁶ *Ibid.*, p. 292.

and depends partly on the number of dealers in the market, and partly upon whether the country is a buyer or seller.

Britain is a buyer and her organization has been built up to meet this condition. The bulk of the transactions are brought to a focus through the Liverpool Cotton Association, or the Manchester Cotton Association. Since the introduction of machine manufacture, the greater volume of cotton has been imported through the port of Liverpool although, in recent years, with the opening of the Manchester Ship Canal, deliveries have been made direct to Manchester.

In 1927 the Liverpool Cotton Association was composed of some 560 members, representing between 250 and 300 firms. The functions are to provide trading facilities both for the "spot" and "future" business, the maintenance of cotton standards, the provision for the grading of cotton, the arbitration of disputes, and the making of the rules of trade.

The marketing of piece goods is in the hands of the Manchester shipping merchants, practically all of whom are members of the Manchester Chamber of Commerce. For the purpose of "promoting and safeguarding group interests," these merchants are organized into seven divisions, representing as many geographical areas, such as "Home and Overseas Dominions," "India," "China and Far East," etc. The shipping merchant "not only distributes yarn and cloth but he also finances the goods from the time they leave the manufacturer (who usually receives payment within seven days), during the bleaching, dyeing, and printing process, until after they have been sold in the country to which they are exported."¹⁷

In America the problem is to so organize the trade as to bring the farmer into contact with domestic mills, or with agents or factors in the foreign trade. A considerable amount of American cotton is produced by small farmers whose only contact with the market is through a small local buyer. Thus many thousands of bales of cotton are passed up through a series of middlemen until the product finally appears at the mill, or at the wharf, for export. Sometimes these dealers cut in somewhere along the line to divert cotton to other dealers who are not in the established channels, or to give it a shortcut to its ultimate market.

Country merchants are often among the original buyers. Their normal occupation is to sell merchandise, but since it often happens that the farmer's only means of payment is the crop which is to be

¹⁷ Butler, *op. cit.*, p. 267.

harvested, the merchant delivers such commodities as are needed and either takes cotton in payment, or undertakes to dispose of it.

The ginner, also, often acts as an original buyer. His main function is that of ginning cotton, but since he operates on a larger scale, with more numerous contacts, than does the farmer, he is often in a position to buy cotton for sale to factors, f. o. b. men, exporters, and others. Sometimes cotton passes from farmer, or country merchant, through the factor, who undertakes to receive the product on consignment and find a buyer. Through these various channels, the commodity ultimately reaches the mill, or, if destined for export, reaches foreign cotton merchants, foreign brokers, or foreign mill buyers through various dealers.

In recent years, a portion of the American crop has passed originally through the hands of coöperative cotton-growers' associations, whose function is to assemble the product from the farmer, to grade and store it, and ultimately to find a market. This process tends to eliminate some middlemen, and to give farmers more immediate control over a part of the marketing process.

In many instances, the requirements of trade make necessary the handling of cotton for future delivery and the diminishing of the risks on such transactions. Thus the future contract markets are a part of the organization. In the United States, these are in New York and New Orleans; their facilities are used by merchants, brokers, exporters and others, who operate under the rules of the association.

As with grains, the hedging process of insuring out the risk is used.¹⁸ This practice protects not only merchants and importers, but banks which have made loans on the transactions. In such markets, prices are determined under open, competitive conditions and are the levels to which local prices are ultimately referred.

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¹⁸ See Chap. XXIX.

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CHAPTER XXIII

OTHER TEXTILE FIBERS

As we suggested in the last chapter, although cotton is the leading textile fiber, a number of other materials are used in the business of spinning and weaving. Wool now ranks second in importance to cotton. But several other raw materials together contribute annually to world commerce an export value of nearly half a billion dollars. In normal years raw silk alone exported from Japan often exceeds \$200,000,000, and shipments from China, Italy, France, and a few others would add at least another hundred million dollars. For many centuries silk fabrics have been used as a mark of distinction, but changes in the textile arts, and the rise of the standard of living in certain countries, have brought such commodities within the means of thousands of persons. Before the introduction of machine production, wool was the leading textile material and cotton occupied only a minor place. That wool is a leading article in international trade is shown by the fact that in 1929 seven¹ of the leading importers paid over \$900,000,000 for foreign supplies, and in 1931 the amount was about \$400,000,000.

Regions of Production

None of the great manufacturing nations, not even the United States with its vast agricultural resources, is self-sustaining with respect to this commodity. In a measure this is because of the great varieties of wool and of the specific nature of the demand. Manufacturers must seek the kinds and qualities in the parts of the world where they are produced. Moreover, wool is sometimes a by-product and sometimes the main product of the livestock industry, a fact which often affects international competition. The greater part of the world's supply is produced in countries with limited manufacturing facilities—in countries with vast stretches of territory especially adapted by nature for this type of enterprise. The five leading wool-growers are in the southern

¹ The United Kingdom, France, Germany, the United States, Belgium, Italy, and Japan.

hemisphere; they usually produce over half the supply. Their output in 1930 was 1,960,500,000 pounds compared with an estimated total of 3,666,300,000 pounds for the whole world. Europe, in the same year, excluding Russia, produced only 377,900,000 pounds. In the United Kingdom, which is the largest producer of woolens, domestic production of wool is scarcely 20 per cent of consumption. However, in this case, domestic imports are no index to consumption, since Britain enjoys a large reexport business. The estimated production of wool in the various parts of the world is given below.²

WOOL: WORLD PRODUCTION IN 1923-1925 AND IN 1931
(MILLIONS OF POUNDS)

	1923-25	1931
Australia	757.7	984.5
Russia	315.0	350.0
Argentina	310.0	331.0
The United States	284.4	411.5
New Zealand	205.8	250.0
Union of South Africa	198.4	301.0
United Kingdom	108.8	127.7
Uruguay	104.0	117.0
Spain	71.0	76.0
Italy	59.1	42.0
Germany	50.7	30.7
Roumania	48.6	47.0
France	44.1	42.6
Algeria	33.9	28.1
Yugoslavia	30.6	30.5
All others	490.1	24.2
Total	3,112.2	3,193.8

Kinds of Wool

A reference to the import records of the United States indicates that animal fibers are given a simple classification, such as carpet wool, clothing wool, combing wool, and hair of the Angora goat (mohair), and alpaca. But, as a matter of fact, this classification is too simple. There are many qualities, and manufacturers are sometimes particular in their demands. As many as "640 grades of wool are recognized

² *Yearbook of the U. S. Department of Agriculture*, 1933, p. 683.

among American dealers; 848 are recognized for Australian wool, and seventy-five grades are quoted regularly in certain periodicals in the trade. Many of these grades move quite independently of one another in the matter of price, because of the varying uses to which the different types and grades are put. The great diversity in type and grade, and the impossibility of standardizing wool, have prevented the development of any future trading in this commodity. In consequence of all this, methods of marketing and financing differ widely in different parts of the world."³

Britain is the largest market, and the method of disposition is through sale at auction. Such sales are held six times a year, each one lasting about a fortnight. Members of the London Exchange deal mainly in the products of the dominions, but certain quantities of wool from other sources are bought and sold. In addition, camel's hair, mohair, and cashmere are sold at auction on this exchange.

The differences in wool are not only in the length and texture of the fiber, but in its general quality. These things depend on a number of conditions, such as the breed of the sheep, conditions of feeding, and the portion of the fleece to which the wool belongs. Wool of Merino sheep has long been noted for the fineness of its quality: it is "beautifully wavy and crimped," sometimes with as many as thirty crimps to the inch.⁴ This type is used in the manufacture of the finest woolen yarns and fabrics.

In various parts of the world Merinos have been crossed with other breeds, in each case producing a wool of characteristic quality. The product from the cross breed of Merino and Lincoln sheep is stronger and longer than pure Merino, but not as coarse as the pure Lincoln. A considerable amount of the wool of commerce is obtained from countries where little or no attempt has been made to improve the quality of animals or wool. The output of the Lincoln and Leister varieties is longer and coarser than the average wools and is known as "combing" wool.

Uses of Wool

Either in the pure form or mixed with other fibers—animal or vegetable—wool enters the manufacture of a great variety of goods, some of which are worsteds, felt, flannel, serge, broad cloth, cassimere,

³ E. E. Pratt, *International Trade in Staple Commodities* (McGraw-Hill Book Company, Inc.), 1928, p. 67.

⁴ C. R. Toothaker, *Commercial Raw Materials* (Ginn and Company, Boston, 1905), p. 65.

carpets, tapestry, hosiery, velvets, and plush. Woolen yarns are often interwoven with cotton or silk to meet some particular requirement which the manufacturer has in mind. In pioneer days in America, wool and linen were woven together in a fabric known as "linsey-woolsey." Sometimes carpets are manufactured by using some fiber like jute, hemp, or cotton as warp along with wool. Felt is a product of either wool or fur, except when used in this commodity the raw material is not spun or woven, but tangled and pressed. It is said that the "scales with which wool and fur are beset greatly facilitate the felting process, and the more numerous the scales the more readily will wool or fur felt." ⁵ Silk and vegetable fibers, which lack these scales, do not lend themselves to the felting process.

Industry makes use of the wool of hair of a considerable number of animals. Not the least interesting of these is the angora goat, which is said to be a distinctively Turkish animal. The hair is the product of what is known as the "tiftik" goat, to distinguish it from the common variety. This hair is used in the manufacture of yarns and braids, for some kinds of plush, and in the manufacture of rugs, bookbindings, shoes, and gloves. As often prepared for the market, it is known as mohair. Another member of the goat family from Tibet and the highlands of central Asia supplies a soft woolly hair which is woven into the cashmere shawl. To-day some goods commonly known as cashmeres are manufactured from sheep's wool. Peru supplies the wool of the llama, the vicuña, and the alpaca. All these enter commerce to some extent, but the latter is the most important. The natives use the wool of the llama and vicuña in making fabrics. From the camel is obtained a fine wool which is especially suited to the manufacture of hosiery, underwear, and shawls.

International Trade in Wool

The currents of trade in this commodity are constantly changing, but in last resort the great manufacturing nations are dependent upon the few sources which are the large producers. Australia is by far the largest exporter, with shipments sometimes exceeding 700,000,000 pounds a year. During the last decade Argentina, the Union of South Africa, and New Zealand have, in each case, shipped from 200,000,000 to 300,000,000 pounds a year. With the exception of Uruguay, no other country has attained this level. On the other hand, the United Kingdom, France, Germany, the United States, and Belgium are the largest

⁵ Toothaker, *op. cit.*, p. 66.

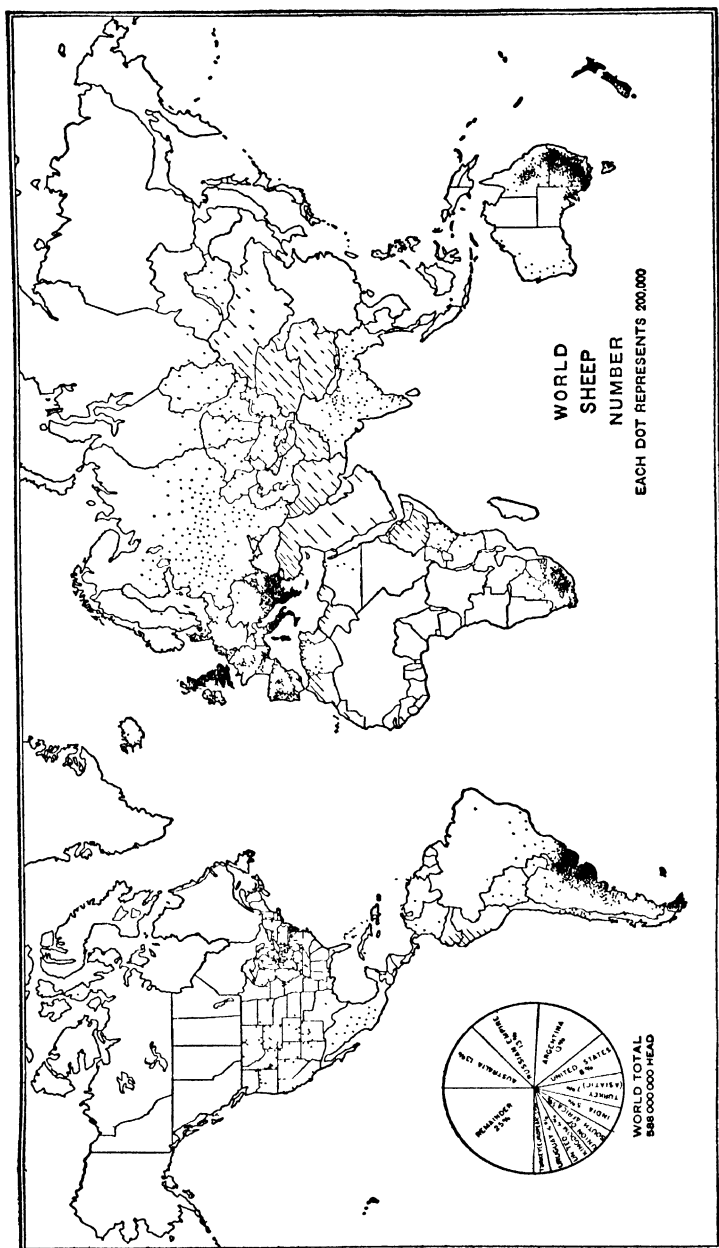


FIG. 28. DISTRIBUTION OF SHEEP IN THE WORLD

importers, taking together between 70 and 80 per cent of the exported wool. Not all of this, however, enters domestic consumption, because most of these countries enjoy a considerable reexport business. The receipts by the principal importers is shown in the following table.⁶

WOOL: AMOUNTS TAKEN BY PRINCIPAL IMPORTING COUNTRIES
(1,000 POUNDS)

	1925-1929 AVERAGE	1931
France	633,028	570,278
United Kingdom	473,061	600,730
Germany	361,447	326,575
United States	288,346	158,385
Belgium	135,887	137,185
Italy	99,134	105,094
Japan	93,489	189,714
Russia	46,095	⁷
Czechoslovakia	35,889	40,227
Poland ..	30,255	35,345
Switzerland	17,404	18,402

Wool Trade of the United States

The manufacturers of this country require large quantities of wool for various lines of production. The output of domestic factories in 1929, including woollen and worsted goods, wool felt hats, carpets and rugs amounted to over \$1,000,000,000. While this country is a rather large producer, the supply is not adequate with respect to either quantity or grades. Hence we must rely upon the outside world to supply what we cannot produce.

There has been a large increase in the number of sheep on the farms of the United States since 1920, in fact a 60 per cent increase in the years from 1925 to 1930.⁸ In the latter year, the number was 56,900,000. Along with this change in number of animals has gone an increase in the annual production of wool, and a decline in the volume of imports. The outcome is that this country is less dependent on the outside world than in former years. In the five years before 1920, imports, less reexports, always exceeded 300,000,000 pounds a year. On several occasions since 1925 annual imports have been much below 100,000,000

⁶ *Yearbook of the U. S. Department of Agriculture*, 1933, p. 622.

⁷ Figures not available.

⁸ *Statistical Abstract of the United States*, 1932, p. 610.

pounds. The United States imports carpet wool from a dozen or more countries, but mainly from Argentina, China, the United Kingdom, India, and Iraq; clothing wool is brought chiefly from Australia, New Zealand, and the United Kingdom, although other countries contribute small amounts; and combing wool is imported from Australia, the United Kingdom, and the Union of South Africa, among others. Mohair and alpaca are imported indirectly through the markets of Britain, although there is direct trade with Turkey, Peru, China, and a few other countries.

Trade of the United Kingdom

As we have already indicated, production of wool in the United Kingdom ranges from about 100,000,000 to 125,000,000 pounds a year.⁹ A considerable proportion of domestic wool is exported, mainly to the United States, Germany, Belgium, Canada, and France. On the other hand, Britain imports large quantities of wool from various regions. In addition, the imports include alpaca, vicuña, and llama wool from Peru and Chile, mohair from Turkey and British South Africa, and camel's hair from various countries. Considerable portions of these latter commodities are reexported.

Britain is the chief market for the products of the dominions, although in each case these subdivisions carry on a considerable direct trade with the importing countries. The reexports frequently exceed 300,000,000 pounds a year.

British and American Industry Compared

As with cotton goods, Britain depends to a large extent on foreign trade to keep her mills in full operation. In 1924, when the last enumeration of manufactures was taken, Britain exported about 34 per cent of the total gross value of the woollen industries. On the other hand, production in the United States is largely for home consumption. Comparative data relating to various aspects of the woollen industry are given in the table on page 384.¹⁰

The manufacture of woollens is widely distributed over the world, many regions producing exclusively for domestic consumption, except where the skill of the artisan has made possible some product of exceptional quality. This is the case with rugs exported from some of

⁹ *Yearbook of the U. S. Department of Agriculture*, 1933, p. 621.

¹⁰ Adapted from Hugh Butler, *op. cit.*, p. 327.

MODERN WORLD TRADE

COMPARISON OF VARIOUS ASPECTS OF AMERICAN AND BRITISH WOOLEN INDUSTRIES

ITEM	UNITED STATES		GREAT BRITAIN	
	YEAR	AMOUNT	YEAR	AMOUNT
RAW WOOL				
Production Pounds	1928	351,013,000	1928	106,112,000
Imports "	1928	240,360,000	1928	780,714,000
Exports "	1928	485,000	1928	48,196,000
Reexports "	1928	4,435,000	1928	339,022,000
Retained for consumption "	1928	586,453,000	1928	499,609,000

WOOLEN AND WORSTED INDUSTRY

Gross value of product	1925	\$957,790,000	1924	\$867,006,000
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FOREIGN TRADE

WOOL SEMI-MANUFACTURES AND MANUFACTURES

Exports	1928	\$6,519,000	1928	\$276,762,000
Imports	1928	\$78,391,000	1928	\$ 84,127,000

the countries of the Near East, of wool laces and embroideries, and of various ornamental objects.

Silk

The production of raw silk is confined to fewer places than is the case with either wool or cotton. While climatic conditions are an influence, the deciding factor seems to be the labor cost in caring for silkworms and in separating silk from the cocoon. Low cost conditions are met in China, Japan, Bengal, Italy, and in certain regions of the Levant, which together supply the world with most of the raw silk. Caring for the silkworm requires close personal attention, in many regions reeling is still done by hand. This process requires much patience and skill, yet wages are very low. The development in recent years of steam filatures, or of mills operated by power, has reduced the cost of unwinding the strands; but this seems to have redounded mainly to the benefits of consumers, although wages have advanced in some regions since the close of the war. Prices of raw silk have been declining continuously for a number of years.¹¹ Silk could be produced in a number of other places if cost conditions could be met. Temperature, however,

¹¹ The average price of Japanese Kansai, No. 1, declined from \$8.22 a pound from 1923 to \$4.77 from 1923 to 1929. See *Yearbook of the U. S. Department of Agriculture*, 1933, p. 766.

is a matter of importance. Satisfactory results may be obtained in a range from about 62 degrees F. to 78 degrees, although it is claimed that the health and vigor of the worm is improved by lower, rather than by higher, temperatures within this range.

Kinds of Silk

The great bulk of the silk of commerce is produced by a worm which is reared exclusively in cultivation, although several varieties of "wild" silk enter international trade. The "univoltine" variety, which produces only one generation a year, yields the better grade of silk, and supplies the greater portion of the raw product. Silk from the "multi-voltine" variety is much more difficult to reel and, therefore, yields more waste than other kinds. The trade makes use of such words as "thrown silk," "waste," "spun silk," "wild silk," to indicate the character of the material. The term "thrown silk" refers to the twisting of the filaments, sometimes more, sometimes less, strains being required, depending upon whether the material is used for warp or woof. Waste is the material on the cocoon which cannot be reeled, such as the "reel tailings," the portion left after the reeling. Sometimes the moth has emerged before the filament has been removed. In this case the strands are broken. But the material is cleaned and carded much after the manner of treating cotton fiber. This is "spun silk."

In addition to these classifications, the grade of silk itself varies according to many conditions. The quality of the eggs, climatic conditions, care in feeding the worms, region in which the industry is pursued, among others, have an influence upon the quality of the product.

Silk of varying kinds is produced from a number of so-called silk-worms. Three classes of silk are produced in China, namely, white, the product chiefly of Kiangsu, Chekiang, and the Canton district; the yellow, which is obtained mainly from Szechwan and Shantung; and wild or tussah silk, which is produced mainly in Manchuria, Shantung and Chili.

Pongee, or Shantung silk, is the product of a worm which feeds on oak leaves. The fiber is of greater strength than ordinary mulberry silk, but the luster and color are not as acceptable to the trade. Thus, this silk is used for more or less specialized purposes. The manufacture of pongee is chiefly a local industry, pursued in regions where cocoons are produced. In many instances, weaving is still a primitive process. In China, local weavers use a crude handmade loom equipped with bamboo teeth. Tussah silk is produced in portions of India and

Burma; the Eri silkworm, which feeds on the leaves of the castor plant, produces a peculiar kind of product which is not reeled in the ordinary way but spun after the fashion of several other fibers.

Artificial silk, as the name indicates, is not the product of the silkworm, but is a manufactured textile which, in external appearance at least, resembles the real product. The raw materials depend upon the process of manufacture, but the customary basis is cellulose prepared from wood or cotton. Considerable quantities of this material are bought and sold in international trade. It is sometimes mixed with other fibers, but more often is the only substance in the textile material.

Development of the Silk Industry

China was the original home of the silk industry. The beginnings of the culture of the silkworm, and the manufacture of fabrics, are ancient history in that country.

Silk was one of the most prized articles in ancient Rome—actually worth its weight in gold. Fabrics were imported from China over channels which even the European merchant did not know. Sericulture in Europe did not begin until about the sixth century of the present era. About this time, two Persian monks, who had resided in China, brought the eggs of the silkworm concealed in a hollow cane. This clandestine business laid the basis for European sericulture. If the worms of the sixth century were as prolific as those of to-day, this little importation of less than an ounce of eggs probably yielded more than 30,000 young silkworms, which soon began to multiply with incredible rapidity, and thus laid the basis for an industry which rendered Europe largely independent of China. Silk was once a badge of distinction, but modern processes of production have brought the fabric within the means of a vast number of consumers. Not only this, but the recent introduction of artificial silk, which is in some respects better than the real product, is still further extending the market among the masses.

The silk industry is still an important branch of enterprise in its native home, but Japan is now the greatest producer, and the Mediterranean countries continue to produce rather large amounts. One reason why China has not pressed its original advantages is that the Chinese, as a rule, still cling to traditional methods of cultivation. For some years the ravages of the silkworm diseases hampered progress, but this evil is now being overcome. But the inefficiencies in the selection of the mulberry upon which the worm feeds, and carelessness in the selection

and breeding of the worms and in marketing of cocoons, are still drawbacks to Chinese industry. Lack of means of communication within the country, also, involves a great waste in the process of marketing.

The industry is capable of enormous expansion, particularly in China, where there is a great abundance of cheap labor; but since, in recent years, the silk market has become both competitive and selective, success depends as much upon the quality of the product as its quantity. Buyers prefer the silk which not only meets their tests of quality, but which has been carefully prepared for the trade. In both these respects, the Chinese industry is notably lacking.

Readers of American history know that, during colonial times, the British government was vitally interested in promoting silk culture in some American colonies. There were no physical difficulties in the way, but since tobacco was the more profitable industry, and because labor was scarce and expensive, planters could not afford to cultivate silkworms. More recent efforts to develop the industry in the United States have met with little or no success for the same reason.¹²

Naturally, in countries like China, which are poorly equipped for the supply of industrial information, statements of annual production are more or less of a guess. But we may obtain some idea of the extent of the industry by the volume of foreign shipments. Japan is by all odds the chief exporter. Shipments in 1931 were about 73,500,000 pounds. In fact, as to relative importance, raw silk occupies somewhat the same position in the export trade of Japan as cotton does in that of America. In the three years ending with 1931, shipments of raw silk constituted about 36, 29, and 31 per cent respectively of the total exports. China ranks as a poor second with shipments in 1931 aggregating 17,400,000 pounds. Small quantities are shipped, also, from British India and Indo-China. Of the Mediterranean countries, Italy is the most important, with shipments the same year amounting to 12,600,000 pounds. Smaller amounts enter the channels of foreign trade from France, Spain, Greece, Bulgaria, Turkey, and a few other countries. The exports from the most important countries are shown in the table on p. 388.¹³

Consumers of Silk

A considerable amount of silk is consumed for manufacturing in practically all the producing countries, and in some instances, these

¹² Lippincott, *Economic Resources and Industries of the World*, p. 394.

¹³ *Commerce Yearbook*, 1932, Vol. II, pp. 85, 159, 519, 551.

EXPORTS OF RAW SILK FROM CERTAIN COUNTRIES ¹⁴
(1,000 POUNDS)

	1929	1930	1931
Japan	76,039	62,156	73,536
China	25,331	20,135	17,447
Italy	13,184	14,236	12,658
France	3,239	2,861	2,458
Total, four countries	117,793	99,388	106,099

nations are also exporters of silk fabrics. Japan ships large quantities of silks, and materials of silk and cotton mixture; China exports various kinds, including silk piece-goods and pongees, and Italy is an exporter of silk and rayon fabrics. France, however, enjoys the largest foreign trade of all the nations. Export of silk fabrics in 1929 amounted to about \$99,000,000, and in 1931 to \$43,000,000. Other European countries, which draw their raw materials from the producing areas, export certain quantities of various classes of fabrics.

The Position of the United States

The United States is the largest consumer of raw silk, and the largest manufacturer of silk products. In fact, this country frequently takes more than 80 per cent of the raw stuff which is shipped by the leading exporters. From 1925 to 1932 inclusive, receipts were never less than 74,000,000 pounds, and they reached a maximum in 1929 of 96,800,000 pounds. But as with cottons and woolsens, the United States manufactures primarily for home consumption. In the census year 1929, the export of silk and rayon products amounted to only about 4 per cent of the gross value of the manufactures. Producers in this country enjoy the advantage of being within the greatest of the world's consuming markets. The efficient organization of the industry for promotion of sales, and the high standard of living of the people, together with the technical facilities for manufacture, have combined to produce these results.

Silk manufacture is a relatively new enterprise in this country. The industry had scarcely made a start in 1860, when the total value of local manufacture was only \$6,607,000. The output at that time consisted mainly of ribbons, silk trimmings, and thread. The value of silk and rayon products in 1930 was \$750,000,000. In 1860 this country produced

¹⁴ Raw and wild, but excluding waste which in 1931 was 14,487,000 pounds.

only about 13 per cent of the amount consumed, but by 1900 it had increased to about 70 per cent. Commenting on the progress of silk-making the Census of 1900 contains the following comment: "Every weave, article, and quality known to mechanical weaving, or which, through alterations on machinery or simplification in manufacturing could be put in the reach of power-loom weaving, have been manufactured in the United States."¹⁵

In spite of its market advantages, the industry, in working its way upward, has labored under certain disadvantages. Raw materials must be imported from a great distance; the manufacture requires a high degree of skill, at least in some of its branches; and the American producer continually encountered the competition of old established industries, particularly, of France, where the "skill and taste of generations have been concentrated upon production . . . of fabrics which in beauty of design, in richness of coloring, in delicacy of workmanship, alone among the fabrics made by modern machinery, rival the splendors of Medieval art."¹⁶

It may seem anomalous that Britain, which ranks among the first in the textile industries, should be a small producer of silks, yet this is the case. In 1928 the United Kingdom imported only about 1,500,000 pounds of silk. Most of this came from Japan.

International Trade in Cocoons

A number of countries take a part of their imports in the form of cocoons. If a region is already prepared to do the reeling, conditions of trade sometimes favor this form of transaction instead of direct dealing in silk. Upon occasions, Japan imports considerable quantities of cocoons from China; Italy and France reel silk brought from various countries in Europe, from the Near East and from China. In recent years, Britain has taken from 2,000,000 to 4,000,000 pounds of cocoons annually from silk-producing countries, but mainly from China.

Rayon

France was the pioneer in the manufacture of artificial silk. The early experiments were performed about 1900, and when the industry began to promise success, it was taken up by other countries. A number of methods are in use for converting these materials into yarn, such as the nitro-cellulose, viscose, and acetate processes. Fortunately, these

¹⁵ Lippincott, *Economic Development of the United States*, p. 450.

¹⁶ *Ibid.*, p. 450.

new discoveries came at a time when both the chemical and machine-making industries were prepared to supply the needs of the new enterprises; and thus manufacture developed rapidly.

Rayon is an article of foreign trade in a number of forms—yarn, pure rayon goods, or fabrics made of mixed fibers of which rayon is a part. In 1931 the seven leading producers in Europe exported more than 129,000,000 pounds of yarn. The United States is the largest manufacturer of rayon, with an output in 1931 of about 144,000,000. During the last decade, the industry has undergone continuous expansion. In Europe, this enterprise has developed chiefly in the United Kingdom, Italy, France, Germany, and the Netherlands, and all these are exporters not only of yarn, but of various fabrics. The British trade is almost as world wide as her commerce in cotton and woolen textiles.

Linen

Flax supplies several important commodities for commerce, such as the fiber which is the source of linen; oil from the seeds, known as linseed oil; and the linseed cake and meal, used as a cattle food. The oil serves various purposes. Prepared in several ways it is used in the manufacture of paints and varnishes, or when mixed with ground cork, in the making of linoleum.

Flax is grown in a number of places, but in any case, it is produced either for the oil or for the fiber, but usually not for both purposes at the same time. If the plant grows until the seeds are fully ripe, the fiber is of poor quality; on the other hand, the maturing of the seeds is required for the best qualities of oil.

For textile purposes the material is most often used alone, but is sometimes mixed with either cotton or wool. Flax is grown for the seed both in the United States and Canada. Minnesota and North Dakota are the principal sources, but smaller quantities are produced in South Dakota, Iowa, Kansas, and a few other states. Production sometimes exceeds 20,000,000 bushels a year. Argentina produces large quantities of the plant, chiefly for seed, and this country is one of the large exporters. Russia produces both for seed and fiber. This country is one of the chief sources of supply for linen-manufacturing countries which do not grow enough flax locally for domestic needs. In fact, flax is one of the important exports of Russia. The United Kingdom and Germany are the chief consumers. Considerable quantities are produced in Belgium, Holland, and Ireland, mostly to supply fiber for the home industry. The manufacture of the various articles of linen

have reached highest development in Scotland, Ireland, France, and Belgium. Production of linens in the United States is of relatively small importance, the value of linen goods in the Census of 1929 being valued at only \$9,700,000. Thus this country depends on foreign manufacture for a considerable portion of its supply. The imports include yarn, fabrics, table-damask, handkerchiefs, embroideries, and lace, among others. These are brought from various sources, but usually the United Kingdom, France, Belgium and Switzerland supply the larger quantities.

The chief centers of the industry in the British Islands are Belfast and Dunfermline. The latter, for many years, has been famous for its damasks. In normal years the United Kingdom produces more than 150,000,000 yards a year of linen piece-goods, the larger part of which finds a market outside the islands.

While the United States has only a small trade in linen goods, it is an important exporter of linseed cake—shipping sometimes more than 600,000,000 pounds annually. The chief consumers are Netherlands, Belgium and the United Kingdom.

With reference to the spinning and weaving aspects of the business, a number of steps are necessary to prepare the fiber for the spinner. In harvesting flax the worker pulls up the plant by the roots. The fibers are enmeshed in a gummy material which binds them to a woody core. The next step is to separate the fibers, which is done either by exposing them to the elements in a damp meadow, or by soaking the stalks in a pool, or in running water. The dried stalks are later passed through fluted rollers which break up the woody material. Then they are scutched or beaten to remove the woody portion, and heckled or combed to separate the long from the short fibers.

Hemp

Jute, hemp, and sisal are of importance to industry chiefly as the raw material for manufacture of rope, twine, and gunny sacks, although the natives in the countries which produce these materials sometimes consume the fibers in making fabrics. Agricultural countries in particular are large consumers of the manufactures of hemp and jute in the form of binder twine, burlap and gunny sacks. Substances belonging to the "hard fiber group," including manila hemp, sisal, and New Zealand hemp are important articles in international trade.

In recent years the United States has been importing increasing quantities of sisal—from 70,000 to 90,000 tons a year in the decade end-

ing with 1930. In fact, upwards of 80 per cent of the binder twine manufactured in this country is produced from sisal. Yucutan is the chief source of supply, meeting upwards of 75 per cent of the world's commercial needs. Conditions in this region are unusually favorable for production. The soil is a dry limestone formation which the plant seems to need for growing conditions. The leaves of the plant are high in fiber; production is aided by an abundance of cheap labor; accessibility to the American markets gives an advantage over fibers which must be imported from greater distances. Moreover, the plant has a long harvest. With proper care the plantation may continue to yield for more than thirty years. The plant "reaches maturity in about seven years, but the blossoming can be prevented after maturity by cutting annually certain proportions of the leaves. These leaves contain the fiber. . . . In order that the plantations may survive, it is necessary to cut the leaves continuously, which results in a steady production of sisal."¹⁷

The United States is the largest importer of the hard fibers. During the five years ending with 1931-1932, the average annual import of jute, manila, sisal and henequen was 234,000 tons. Upwards of 50 per cent of this tonnage was sisal and henequen and about 21 per cent was manila hemp. Yucutan is, of course, the chief source of sisal, but small quantities were brought from Netherlands East Indies, Cuba, and from other sources, indirectly through Netherlands and the United Kingdom. Practically all the manila fiber is imported from the Philippine Islands. India is the source of jute. The exporting countries, however, have other markets than the United States, although, in the case of most of these fibers, the United States is the chief consumer.

From time to time, attempts have been made to control the marketing of sisal. In 1915 the congress of Yucutan enacted a law providing for the regulation of the supply. Some months later, under the auspices of an American banking group, there was organized a New York corporation under the title of the Pan-American Commission Corporation. The purpose was to finance the Yucutan Regulatora under an exclusive sales contract. Thereupon the governor of Yucutan issued a decree which gave to the Regulatora the exclusive right to purchase sisal from the producers and to handle the marketing abroad.

The organization encountered hard sledding, partly because of opposition in the United States, and partly because of local mismanage-

¹⁷ L. Crossette, *Trade Information Bulletin*, No. 200 (U. S. Department of Commerce), p. 5.

ment, and it eventually failed. But subsequently another agreement was formed for practically the same purpose. The effect of such control was to advance the price of the raw material. In fact, about 1923, it was claimed that "assuming seven cents per pound as the return to producers in years of maximum prices, then the American farmer was mulcted of over \$25,000,000 per annum."¹⁸

On the other hand, something can be said in favor of "orderly marketing" of the product. When prices fall, producers tend to stop stripping the plants and they are permitted to bloom and die. "When prices advance to a high point, cultivation is overstimulated, excessive cultivation is brought about, and collapse of prices is inevitable. Neither of these results is a benefit to the American consumer, who is chiefly the American farmer, and he must look with sympathy on plans which are intended to bring about a fair return to the Mexican farmer and to maintain an even and progressive flow of production to meet American demands."¹⁹

Hemp has long been consumed for one purpose or another, but the uses of modern industry have not only intensified, but have diversified, the purposes.

For years Russia was almost the only source of hemp for export, and that country is still an important exporter, although jute, sisal, and Manila hemp have become great competitors of the Russian product. Manila hemp has lost some of its importance in western markets, partly because of the substitution of sisal. The great distance of the Philippine Islands from the leading consuming markets is a disadvantage, a condition which is aggravated by the crude conditions under which production is carried on in the Islands. The plant is known as abaca. It bears much resemblance to the banana plant and belongs to the same family. It grows in the wild state in the Philippine Islands, and attempts to introduce it in other parts of the world have met with only moderate success.

Small quantities of hemp are grown in the United States; Italy often produces a surplus for export, and China produces considerable quantities for domestic consumption. In fact, hemp may be grown in many parts of the world, but it is produced for export in only a few places where conditions are exceptionally favorable.

¹⁸ *Op. cit.*, p. 4.

¹⁹ *Op. cit.*, p. 5.

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CHAPTER XXIV

THE INTERNATIONAL MEAT TRADE

By far the greater portion of the meat which is shipped into international trade originates in about eight countries. These regions are also large exporters of products related to the livestock industry, such as lard, tallow, grease, canned and preserved meats, condensed and preserved milk, butter, and cheese. Argentina, Uruguay, Brazil, and Australia are the largest shippers of beef; lamb and mutton are the main exports of Australia and New Zealand, although these countries ship some beef; the chief exports of pork products are made from the United States, Denmark, Netherlands, and Canada. This trade is based on differences in natural and economic conditions. Most of the exporting regions possess advantages which the importers do not share. On the other hand, economic conditions in the importing countries are such that they must depend on the outside world for at least a portion of their supply.

Value of the Trade

All in all, in normal years, the export value of the products named above is between \$800,000,000 and \$900,000,000 annually. The value for 1930 is shown in the table below.

EXPORTS OF BEEF, MUTTON AND LAMB, CANNED MEATS, PORK, LARD, TALLOW, PRESERVED MILK, BUTTER, CHEESE, FROM EIGHT LEADING COUNTRIES (1930)

Butter	\$248,200,000	Preserved milk	\$ 31,300,000
Pork	205,300,000	Canned Meats	22,100,000
Cheese	124,200,000	Mutton	20,000,000
Beef	121,900,000	Tallow	17,600,000
Lard	85,600,000	Lamb	8,500,000
Meats (unspecified) .	53,300,000		
		Total	\$938,000,000

The character of the product made in the dairies of the various countries varies. Denmark, New Zealand, Australia, Netherlands, and

Argentina are large exporters of butter; the larger portion of the cheese comes from New Zealand, Netherlands, Canada, Australia, Switzerland, and Italy. Apparently, in some countries the "dual system of dairy production is largely practiced; in New Zealand, for instance, the object being to produce butter or cheese as the market demands, and the result is that exports are more or less evenly divided between these two products."¹

Practically all the countries which produce meat and dairy products for export are also large consumers; only the surplus enters international trade. In some cases this surplus is exceedingly large, as with Denmark, Argentina, Australia, and New Zealand. Moreover, it often happens that the countries which are the largest producers are not the largest exporters. The United States, for example, has very little beef for export, but it produces more of this commodity than any other country. Further, the export of pork, which sometimes attains a large volume, is only a small proportion of domestic production. The same remark applies to butter, of which the United States is the largest producer. Similar conditions prevail in some other nations.

The Case of Denmark

This country presents an anomalous position in the international meat trade. It is unbelievable that a little region, with an area of 16,500 square miles, about one-third the size of New York state—and with a population of only 3,500,000 should be the second largest exporter of pork products, and a serious competitor of the United States. But this is the case. In 1930 there were only one-tenth as many hogs on the farms of Denmark as in the United States; but this country was able to export 738,000,000 pounds of pork as compared with 949,000,000 pounds for the larger country on this side of the Atlantic. To point to the fact that the United States has a large population and consuming power is to indicate only a part of the truth. Denmark has specialized in the production of pork products, and has organized her industry in such a way as to obtain large returns for her efforts.

These results have been achieved because of a careful study of market conditions in the United Kingdom—the chief customer—and of the introduction of scientific methods of production and marketing. Denmark cannot afford to use any considerable portion of its limited area

¹ M. A. Wulfert, *Trade Promotion Series No. 31* (U. S. Department of Commerce, 1926), p. 1.

in the production of feedstuffs. The raw materials for feeding are barley, corn, and skimmed milk. Most of the grain is imported. By systematic breeding, Danish farmers succeed in obtaining two litters each year, with from nine to twelve pigs at each farrowing. At this rate, they are able to send from three to four million pigs a year to the export slaughter houses.

The growth of Danish export meat business dates back to about 1887. In that year, Germany, in order to protect her own hog-raising industry, prohibited the import of live and dressed hogs. Danish producers were forced to find another market and they turned to the United Kingdom. Meanwhile they organized cooperative societies both for production and for marketing.

These associations sent representatives to study British markets; they sent their hogs to the coöperatives; and, in addition, they kept accurate records of feeding and breeding. The outcome was not only production of an animal which was remarkably well adapted to the needs of British markets, but the development of surprising uniformity in size and quality of the product. "Looking at a string of them (hogs) hanging on an overhead rack, the noses of the pigs are in almost perfect alignment, varying no more than an inch, and their weight and size in general are the same. Even in color there is the same similarity; all are white, clear, and clean."² The purpose of breeding is to give a long body, a long bacon side, with as little offal as possible. The product is carefully inspected, and animals which do not conform to the standard are either slaughtered for domestic consumption, or exported to regions which are not as particular as the British in the appearance of the commodity.³

The work of the associations gives an interesting example of the operation of the coöperative principle. Farmers agree to ship hogs to the association. The central organization fixes the price a week in advance and the farmer receives his compensation on this basis. The various coöperative slaughtering houses have further federated into the Danish Bacon Company which controls the selling in England. If this organization makes a profit, it is divided equally among shippers and customers. Losses are assessed against the packing houses in proportion to shipments.

² J. E. Wrenn, *Trade Promotion Series Bulletin No. 26* (U. S. Department of Commerce), 1925, p. 140.

³ Lippincott, *Economic Resources and Industries of the World*, p. 341.

Meat Exports from South America

In this part of the world Argentina is the largest producer of live-stock, followed in importance by Brazil and Uruguay. The capacity of this area for meat-production is shown by the fact that in 1930 the estimated number of cattle in the three countries was 73,700,000, of sheep 67,700,000, and of hogs 19,100,000. Brazil and Argentina contain about the same number of cattle, but there were about six times as many sheep in Argentina as in Brazil. The growing of hogs is of minor importance in all these countries.

In addition to these three nations, Paraguay, Venezuela, and Colombia produce a considerable number of cattle, but the raising of sheep and hogs is of little importance, and the meat industry plays little or no part in the international trade. All these countries are far below their potential capacity for production, but in view of the state of foreign demand, there is not much possibility for expansion for some years to come. In continental Europe, at least, the tendency since the war years has been to encourage the further development of domestic livestock-raising and to put restrictions on the import of meats. The United States, also, protects home producers with a tariff. International competition is rendered the more difficult because of the policy of a few meat-producing nations to give legislative aid to farmers or packers, sometimes in the form of a bounty on exported meats, sometimes in the form of special credit arrangements in favor of the farmer.

Most of the meat-producing countries are also exporters of other animal products, such as hides, skins, and wool. In some cases meat and other animal products form a large percentage of the exports. In New Zealand, for example, they amounted to more than 85 per cent of the total in 1930, and in Australia, they were more than 45 per cent of the total foreign shipments. With Denmark, in 1930, the exports of pork and butter constituted 62 per cent of the export business.

Argentina was the first of the South American countries to develop a considerable trade in meats. Physical conditions offered many advantages for the growth of the business. There were possibilities of producing an abundance of feedstuffs; climatic conditions were favorable; and the great stretches of open spaces afforded opportunities for the growing of livestock on a large scale. Moreover, it was relatively easy to establish transportation connections with Europe which was in prospect as the chief consumer. Until about 1880 the livestock industry of this country was represented only by the large herds of wild

cattle which roamed the pampas, and which were hunted for tallow and hides—a condition that prevailed in Texas until the development of the northern cattle trails and the opening of the western railways.

The development of an orderly business for the supply of distant markets depended upon the establishment of settled government, and the investment of foreign capital, not only in the opening of plantations and the building of packing plants, but in the construction of railways. Capitalists of the United Kingdom were pioneers in railway-building. Subsequently, both American and British capital was supplied for the erection of packing houses and for the organization of the export business in meat products.

In Argentina, the capacity of the country for stock-raising far exceeded the possible home demand for meats. Access to foreign consumers was an indispensable condition of growth. This was made possible by the discovery of artificial methods of refrigeration. Some trade of this description, between the United States and England, began in 1874, but the methods were crude, and what was of more significance, the prejudice against refrigerated meats militated against sales. Later developments proved that chilling was a satisfactory method of preservation. The growing success of the new methods gave Argentina its real opportunity for development. But the next step was to improve the quality of the meat, because the English market was selective.

To a large degree, the success of Argentina in cattle-raising has been due to the use of alfalfa. This plant can penetrate into the semi-arid soil and draw up moisture, and it has thus made possible the use of waste land without the aid of irrigation. It has a higher animal-carrying capacity than native grasses; in fact, it is maintained that an acre will support from one to two animals, while about eight acres are required with grass feeding. Moreover, alfalfa has the advantage of both a long yield and a long harvest. From four to eight cuttings a year are possible, and in certain favored areas it grows more than ten years without replanting.

The bordering nations, Uruguay, Paraguay and southeastern Brazil, are, to all intents and purposes, a part of the stock-raising area, of which Argentina is only one section. Uruguay has nearly reached its maximum production, but, in other sections, a great expansion is possible. Brazil produces large crops of corn and possesses vast regions for pasturage. In some sections, the open range system still prevails. Cattle roam for great distances without care or attention. As yet, the ranch-

man has hardly begun to tap the real capacity of the country. Somewhat the same conditions prevail in Paraguay.

Other regions in South America have vast stretches of land which may be used for stock-raising when the time comes. Most of the Bolivian areas are as yet inaccessible. This, also, applies to much of the land in Colombia and Venezuela. Thus far, ranchers and packers have paid little attention to these countries. In Colombia the government has given financial aid to the establishment of packing plants, but the organized effort of large companies, similar to those in Argentina, is required for the promotion of the industry. All in all, South America offers the prospect for a great development of the packing industry when the need arises, but much capital must be invested in the undeveloped regions before this expansion can take place.

Australia

The livestock industry is of greater relative importance in these countries than in any other regions of the world. Dry climate and abundance of native plants have favored the raising of sheep—conditions which account also for the fine quality of the wool. The production of swine is of small importance, and the number of cattle is small, compared with other countries which raise livestock; but there are more sheep on the farms of Australia than of any other country. The status of the livestock and animal products industry is shown in the table on page 401.

Mutton and lamb and wool are joint products, and the price of wool is often the deciding factor with respect to the kind of product which goes to market. If the price of wool declines, and the carrying charges for sheep are high, meat is exported in larger proportions. Production conditions elsewhere in the world have much to do with the ups and downs of the Australian market for both meat and wool. The great distance from consuming markets often militates against the sale of Australian products. This is more particularly the case with cattle products than with those of sheep, although, with the latter also, Australia often feels the competition from Latin America; this is notably the case with beef. Moreover, freight, insurance, and refrigeration charges are higher from Australia to the consuming markets than from Latin America. Because of these difficulties, this country has at times urged preferential tariff treatment for its products in British markets. Another policy sometimes urged is a bounty by the Australian government.

THE INTERNATIONAL MEAT TRADE 401

ANIMAL AND ANIMAL PRODUCTS IN AUSTRALIA (1930) ⁴

ANIMALS (thousands)

Sheep	110,500
Cattle	11,700
Swine	1,070
Goats	130

ANIMAL PRODUCTS (1,000 pounds)

Wool	912,000
Butter	351,000
Bacon and hams	71,000
Condensed and powdered milk	51,500
Cheese	33,100

ANIMALS SLAUGHTERED (thousands)

Sheep	15,900
Cattle	1,900
Swine	1,300

An interesting feature in the development of the meat trade of Oceania is that the Asiatic areas, with their vast population, offer little or no market. Here, economic considerations are a part of the cause. Most of the people in Asia have no purchasing power for imported commodities. And added to this, habits of consumption, tradition, and—what is of greater importance in some regions—the injunctions of religion, impose rigid limitations on the consumption of animal products.

New Zealand

The livestock industry in New Zealand is on smaller proportions than in Australia, but the output of animal products is important. This is shown in the table given below.

NEW ZEALAND: ANIMAL PRODUCTS; THOUSANDS OF POUNDS (1930-31) ⁵

Factory butter	258,300
Creamery butter	5,800
Cheese	208,000
Pork, bacon, hams	60,200
Mutton and lamb	550,900
Beef and veal	290,200
Wool	217,100

⁴ Figures for goats, condensed milk, and for animals slaughtered are of 1929. See *Commerce Yearbook* (U. S. Department of Commerce), 1932, p. 592.

⁵ Figure for creamery butter is 1929-1930, *Commerce Yearbook*, 1932, *op. cit.*, p. 605.

In 1931 the estimated number of sheep on the farms of New Zealand was 29,700,000, and of cattle 4,080,000. Until about 1880, sheep were raised in New Zealand only for wool. As with Australia, the long distance to market, and the difficulties of preserving meat, prevented export. The earliest shipment from Australia was in 1880. Two years later export began from New Zealand. Meat and wool are joint products and the problem of breeders is to discover a variety of animals which will best serve the joint purpose. Thus, according to local authorities, "the most profitable sheep for New Zealand is that which combines the best fleece and the most suitable carcass for freezing purposes, together with early maturity. . . . This is the class of sheep which some breeders have set themselves to produce." ⁶

The Union of South Africa

As with the two other meat-producing divisions of the British Empire, farmers of the Union of South Africa devote much more attention to the production of sheep than of cattle. In fact, in 1930, this country contained five times as many of the former as the latter. Wool is the most important animal product exported, although considerable quantities of meat and butter are shipped into international trade. Cheap land and extensive grazing throughout the year are promising advantages, but the Union suffers along with Australia and New Zealand from world competitive conditions. A rise in the world price would probably not bring a permanent advantage since it would stimulate further production in the Latin-American countries. On several occasions the Union has tried to match the unfavorable marketing situation by legislative aid. But thus far, these have produced no notable results.

The Packing Industry in the United States

This country has several advantages over other meat producers. Among the most important are the enormous consuming power of the domestic market, the diversified facilities for the raising of live-stock, the high state of organization of the packing business both for production and distribution, and the many facilities for transporting raw and finished products to market. Slaughtering and meat-packing are among the most important manufactures of the country; in 1929 the output (wholesale meat products) was valued at \$3,400,000,000.

Pork is the most important meat product in American use. In 1931 the per capita consumption was 69.6 pounds, compared with 49.6 for

⁶ *New Zealand Official Year Book 1903*, p. 599.

beef. In fact, during the past twenty years, the consumption of the latter has been declining steadily. During the period from 1910 to 1914, it averaged 63.8 pounds annually. Consumption of mutton and lamb and veal is relatively small, compared with the other two meats. In 1931 it was 7.1 pounds per capita for the former and 6.9 pounds for the latter. The production of various kinds of meats and lard in the United States is shown in the table below.

PRODUCTION OF MEAT AND LARD: POUNDS; 1931

Pork	8,907,000,000
Beef	6,132,000,000
Lard	2,385,000,000
Mutton and lamb	878,000,000
Veal	860,000,000
Total	19,162,000,000

This production is primarily for the home market. The export business is mainly in pork—bacon, hams, and lard—although foreign shipments include small quantities of beef, mutton, and canned meats.

Importers of Meat

Except for a few of the larger countries of Europe, the production and consumption of meat throughout the nations is mainly a domestic matter. Even with the larger countries, imports satisfy only a small proportion of home needs. Britain is an important exception. Domestic production supplies only about half the consumption requirements. The difference must be made up from outside sources. In 1931 her imports of beef, mutton and lamb, hams and bacon amounted to about 3,479,000,000 pounds which was a little more than 80 per cent of the imports of Europe. France, Germany, Belgium, and Italy are other big importers, and a number of other countries purchase small amounts; but their trade is relatively small, compared with that of Britain.

The situation in the United Kingdom makes import necessary. This country is highly industrialized with a large proportion of the people living in cities and towns. The land area is small considering the task which the farms are called on to perform in supplying people with varied food products. The customary consumption requires large quantities of meat; it has been estimated that the per capita consumption of beef is about sixty-three pounds, of pork forty-one pounds, and of mutton twenty-two pounds. In 1931 the islands contained only

7,900,000 cattle, 3,100,000 swine, and 26,200,000 sheep. Taking into account the size of the population, this was a smaller proportion of live-stock than is on the farms of France and Germany.

Domestic slaughtering, however, supplies a portion of domestic needs. The business is conducted by a large number of small plants, possibly 20,000 in England and Wales. In a few cities which have fairly large meat and livestock markets, slaughtering is done in public abattoirs. The carcass is then exhibited for sale in a market place where it is sold to retail butchers. But there is a considerable variation in the process. "Much depends on the size and organization of the market-place as to the procedure that will be followed in any particular instance."⁷

Britain has the advantage of a number of sources of supply. Part of the beef comes from Argentina, Uruguay, Brazil, Australia, and New Zealand; pork from the United States, Denmark, the Irish Free States, and Netherlands, with small quantities from elsewhere in Europe. The greater part of the business is conducted by large packers who own the packing plants abroad, and who ship both chilled and frozen meat to the British markets. These large packers are British, Argentina, Netherlands, and American companies.

In general there are "four distinct classes of meat importers. One class consists of the South American packers who distribute their meats through their own selling organizations to retailers in the principal towns and cities. They are both importers and distributors. Some packers operate a chain of retail meat shops through which they sell products direct to consumers. The second class, the American-owned companies, have no interest in retail shops in the United Kingdom; they confine their operations entirely to wholesale distribution. The third class of importers consists chiefly of the New Zealand and Australian meat companies which do not have a distributing organization in Great Britain. These companies have representatives or agents in the principal import centers, who make contracts with large retailers, speculators, and wholesale distributors for forward sales, or who sell ex-store to the general wholesale trade. . . . The fourth class is made up of many small wholesale meat dealers to whom small shipments are frequently made on consignment from the continent and from British countries."⁸

A few years ago the South American meat war was an incident in the development of the trade from that continent to Britain. Prior to that

⁷ Hugh Butler, "The United Kingdom," *Trade Promotion Series No. 94* (U. S. Department of Commerce), 1930, p. 468.

⁸ Butler, *op. cit.*, p. 472.

time, a proportion of the British trade was allotted to each company, but with the expansion of the business, the old arrangements were thrown out of balance and disagreement followed. These difficulties were finally settled in 1926 by a new plan which provided other percentages and made allowances for the expansion of new works.

As already indicated, the foreign requirements of France, Germany, Belgium, and Italy are much less than those of Britain. From year to year, these countries import varying amounts, depending on local conditions. Foreign shipments to France rarely exceed 230,000,000 pounds a year; those to Germany are sometimes larger—330,700,000 pounds in 1928—but imports have declined since that time. The Belgian imports usually exceed 100,000,000 pounds. Much smaller quantities are imported by about a dozen other European countries. The wide distribution of American pork products, although in small quantities in each case, is one of the features of the meat trade with Europe. In addition to commerce with distant nations there is a considerable exchange of products, mainly among nearby countries.

The trade of the leading countries in beef and pork products is shown in the following tables.

BEEF AND BEEF PRODUCTS: WORLD TRADE (1930) THOUSANDS OF POUNDS ⁹

PRINCIPAL EXPORTING COUNTRIES	EXPORTS	IMPORTS
Argentina	1,114,280	66
Uruguay	329,829	
Australia	224,986	863
Netherlands	179,228	137,113
United States	117,985	15,339
New Zealand	103,098	592
Total	2,069,406	153,973
PRINCIPAL IMPORTING COUNTRIES	IMPORTS	EXPORTS
United Kingdom	1,640,993	29,176
Germany	193,629	21,478
France	112,043	38,078
Belgium	88,662	19,638
Japan	69,888	
Cuba	31,031	
Total	2,136,246	108,370

⁹ Data compiled from *Commerce Yearbook*, 1932 (U. S. Department of Commerce), p. 691.

PORK AND PORK PRODUCTS: WORLD TRADE: 1930 (THOUSANDS OF POUNDS)

PRINCIPAL EXPORTING COUNTRIES	EXPORTS	IMPORTS
United States	949,730	4,655
Denmark	738,248	2,784
Netherlands	210,205	5,225
Irish Free State	81,312	55,661
Canada	20,651	21,398
Poland	17,124	30,805
Total	2,017,270	120,528

PRINCIPAL IMPORTING COUNTRIES	IMPORTS	EXPORTS
United Kingdom	1,477,216	5,102
Germany	237,707	13,735
Cuba	101,265	
France	79,799	1,602
Czechoslovakia	60,435	2,573
Austria	23,337	316
Total	1,979,759	23,328

Butter and Cheese

The aggregate value of the international trade in these products is surprisingly large. The value of butter shipped in international trade in 1924 was estimated at \$300,000,000, and of cheese at \$150,000,000. The amount rose to even higher figures in the prosperous times before 1929, but has since declined. But at that, the exports of butter from the six most important countries in 1930 were \$242,000,000, covering about 853,300,000 pounds.

An international trade in these commodities has existed for many years, but most often the commerce was among adjacent countries. The great difficulty of shipping perishable commodities long distances, particularly when they were exposed to considerable changes of heat and cold, restricted such trade to small proportions. The introduction of refrigeration worked a great change in this commerce so that today the movement of both butter and cheese is general throughout the world.

Long distance trading began about 1881, when the first shipment

of butter was made successfully from Australia to England. Refrigeration had "by this time developed to such an extent that the butter suffered but little deterioration in its travel, more than half the way around the world, and opened the way to markets unrestricted by distance or climate."¹⁰ Meanwhile, other distant countries entered the business as exporters. At present, the chief sources of supply are Denmark, New Zealand, Netherlands, Russia, Australia, and Argentina. By far the largest quantities are obtained from Denmark. Shipments in 1930 were 372,500,000 pounds, valued at \$117,128,000. Exports from New Zealand, which ranked second, were 211,035,000 pounds, and from Australia 102,443,000 pounds.

One reason for the success of the Danish business is that it is pursued as a specialized enterprise, and not as an incident to some other undertaking. Large nearby markets for the product have added to the advantages. In addition, the country maintains a careful system of inspection and grading for the protection of quality.

The organized dairy business of this country is more than a century old. Until 1865, exports to England, the chief market, were by a roundabout route through Germany; but the first direct shipment was made in that year. From this time Denmark stressed the trade in butter, gradually building up an organization to make the industry a success. An important step was the establishment in 1882 of the first successful cooperative creamery. Then followed more thorough systems of inspection and grading, designed to protect both producers and consumers. Subsequently, dairymen, in order to retain their position in England, introduced the system of winter dairying, providing for year-round production. In practically all exporting countries to-day, butter is inspected and graded, sometimes under control of government authority, and not infrequently the product bears a brand indicating its source.

Butter in some quantities is now imported into many regions. A number of European countries trade with their neighbors, a practice which is followed to some extent in other parts of the world. Mexico imports chiefly from the United States; other Latin-American countries purchase from Argentina, and sometimes import from Europe. In the Far East, Japan and China draw supplies from Australia and New Zealand, as well as from the United States and Canada.

The trade in cheese is now about as world wide as the commerce in

¹⁰ M. A. Wulfert, *op. cit.*, p. 3.

butter. But there are a number of important differences. For one thing, there are a great number of brands; each is prepared in its own way, and each has its own characteristics. Although there are imitations, the existence of characteristic qualities is a factor which creates essential differences in the products of different regions and is therefore a cause for trade.

The various kinds of this product have been described as follows:

"Cheddar cheese constitutes over 40 per cent of the world cheese exports. This type emanates from New Zealand, Canada, the United States, the Netherlands, and the Scandinavian countries. Other types of cheese which enter world trade are the Camembert, Roquefort, and Brie, principally from France; Emmenthal from Switzerland; Gouda, Edam, and small quantities of Cheddar, Leyden, and Clove cheese from Netherlands. About 30 types of cheese are made and exported from Italy, including for the most part Romano, Grano, Parmesan, Reggiano, Emmenthal, Gruyère, Pecorino, Caciocavallo, and Provolone of the hard cheeses, and Gorgonzola, Stracchino, and Fontina of the soft cheeses. . . . Owing to the various types of cheese produced by each country, direct competition on the world markets is restricted to those countries producing the same types, the other types having distinct markets." ¹¹

While many countries are producers, the great volume of the product which reaches international channels is exported from Netherlands, New Zealand, Canada, Italy, Switzerland, and France. In 1930 these countries exported 688,100,000 pounds, valued at \$122,400,000. Many of these cheeses have a wide distribution, but none exceed the products of Switzerland, which are said to be exported to about forty countries. Britain is the largest consumer of imported cheese, but Germany, France, and the United States are also large importers.

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¹¹ M. A. Wulfert, *op. cit.*, p. 30.

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CHAPTER XXV

HIDES AND LEATHER

Animals, chiefly cattle, sheep, and goats, are the main sources of supply of hides and skins; but at present, when the demands are highly specialized, reptiles, fish, and even some birds contribute materials for the tanner. As yet the manufacture of hogskins into leather has not reached large proportions, but this material has a number of uses, and the demand seems to be growing. In addition there is considerable use for the pelts of deer, kangaroo, buffalo, dogs, seals, walrus, sharks, porpoise, whales, sturgeon, alligators, lizards, ostriches, and various others.¹ The sources of supply are the regions of the earth in which these creatures are found in nature. Each material serves a specific purpose, and dozens of uses are found for the commodities.

Character of Hides and Leather

Leather is a manufactured product whether the process is performed by hand or by mechanical devices. Hides are converted into leather by one of the many processes, which in substance, produces both chemical and physical changes in the hide. Tanning is designed to convert "putrescible animal matter" into materials which are permanent, and which, at the same time, possess the degree of softness and flexibility required by the purpose to which the material is put. This may range all the way from delicate, fine products used in the manufacture of ornamental objects, and some wearing material, to coarse heavy substances like sole leather. The character of the output is determined partly by the kind of material used, and partly by the process of production. Usually, the conversion of hides into leather involves a number of steps, but it is simple enough when performed by mechanical methods. Tanning materials, as we have already seen, are obtained from many parts of the world, but in addition, much leather is prepared not by vegetable materials but by manufactured chemicals.

As a rule, the importing country takes its materials in the form of

¹ A. Rogers, *Industrial Chemistry* (D. Van Nostrand Company, Inc., New York, 1926), p. 589.

hides and skins. Not infrequently a tariff is imposed on imported raw materials for the protection of both manufacturers and producers of livestock. This signifies that the larger part of international trade is in the form of hides and skins rather than in leather. In the case of the United States, imports of raw products, measured in terms of value, in 1931, were about five times greater than the imports of leather, and with Germany and France about twice as much. In the case of the United Kingdom, the imports of leather were somewhat greater than of the raw stuffs. On the other hand, from the manufacturing countries, at least, there is a considerable export of leather, and a still larger trade in the manufactures of this material.

Some countries place various restrictions on the export of hides and skins, sometimes for the purpose of assisting the business of the home tanners, sometimes to conserve the supply for home consumption, and occasionally to direct the trade into certain desirable channels. In the case of France, the export of hides and skins was prohibited by a decree of January 25, 1924, except under license granted by public authority. This measure was put into operation at the instance of tanners who insisted that workmen were thrown out of employment by the free export of materials. In Czechoslovakia, an export tax of 10 per cent on the invoice value of sheep and lamb skins amounted to virtual prohibition of exports. Similar arrangements prevailed in Algeria, where the export of sheepskins was prohibited. These products are retained either for domestic consumption or for use by French industry. These restrictions often meet the opposition of members of the trade. In Austria, where the export of hides and skins is prohibited, dealers claim that while it is true that domestic consumption exceeds production, the prohibition of exports compels them to sell hides of the first quality at lower than foreign prices.

Sources of Hides and Skins

Naturally, the quality of the raw material varies from place to place. The character of hides may be injured by careless take-off. In some countries farmers are responsible for poor quality because of lack of proper care of animals. Injury is notable where animals are used primarily for draft purposes. Hides are sometimes punctured by insect bites, and the character of the environment and methods of feeding often affect their value.

Practically every country in the world makes some contribution to the international supply. But the largest additions come from those

regions which are surplus producers of beef and mutton. Thus, Argentina, Brazil, Uruguay, and to some extent the northern countries of South America, and New Zealand, Australia, and the Union of South Africa, are the most important factors in the market. In all these countries there is a large surplus above domestic requirements. While in these regions there is a local tanning industry of some description, the leather thus produced is mainly to supply a part of the home consumption. The larger countries prefer to take their imports in the form of hides and skins.

As a rule, European countries have no surplus above domestic uses, although, because of differences in grades and industrial requirements, there is a considerable amount of trading among these nations and with countries outside the continent. Moreover, some countries enjoy a large reexport business.

From the point of view of volume—Asia is not an important source of supply, although, in some instances, high grade materials come from this continent; on the other hand, from some regions the quality is low. In China, for example, many cattle are used as beasts of burden, and hides are often badly scarred as a result of rough treatment of the animals. Careless methods of collecting and preparing materials for market, particularly in interior places, results in a poor quality of product. Among poorer farmers, hides and skins are used as a medium of exchange and are traded locally for such commodities as the producer may require. Through various channels these materials reach the larger cities where they are graded and prepared for export.

India exports considerable amounts of buffalo and cattle hides, and large quantities of small cattle hides known as East Indian kips, usually shipped in a semi-tanned state. This country is also the source of large quantities of goat and kid skins. From the original source these pass through various channels and are finally delivered for export at one of the seven central markets, of which Bombay and Madras are the principal ones. Patna skins, called by various names depending on the place of origin, are noted for giving a fine-grained strong leather. All of this material is consumed in the manufacture of boots and shoes, and the United States offers the largest market. While Madras is not important as a shipping center for raw skins, it is the location of a considerable tanning industry for goatskins, buffalo and cowhides and sheepskins.

Practically all of Asia labors under the handicaps of primitive marketing organization and lack of transportation. Sources of production

are usually small and widely distributed. Contact is first established with distant markets through the agency of local buyers, who sometimes travel from place to place making purchases in small quantities. These commodities may pass through the hands of several middlemen before delivery at the final shipping point. Local transportation is often on the backs of animals. Aden is one of the important collecting points. At this place are assembled materials from southern Arabia, Abyssinia, and British, French, and Italian Somaliland. The commodities are mainly goat and kid skins, although small quantities of cattle hides and calf skins are collected. These products are among the few commodities which natives have for sale, and consequently to them, at least, the trade is important. Collection of skins "in this part of the world is achieved in many ways, as skins mean money to the native and are his principal means of support. They constitute the greater part of the native's purchasing power for important necessities. About 50 per cent of this business is done by simple barter, and the other 50 per cent on a cash basis. Barter is the method principally used by those merchants who have the most direct means of dealing with the ultimate producer."²

Japan is an importer rather than an exporter of the raw materials for leather. In fact, the economic conditions are against the maintenance of a livestock industry. In 1930, according to the estimates, there were only 1,498,000 cattle, 24,000 sheep and 217,000 goats in the islands. This country, therefore, depends on the outside world for considerable quantities of raw materials. The chief sources of supply are China and the United States; but imports are received also from Canada, Australia, France, the United Kingdom, and British India.

In Africa, the Union of South Africa is the most important factor in international trade, but all the other divisions ship varying amounts. The Union exports mainly cattle hides, although shipments include considerable quantities of goat and kid skins. The United States and the United Kingdom are the chief markets for the latter, while the United Kingdom is the chief consumer of cattle hides, with large quantities also going to France, Belgium and Germany. With large herds to draw upon, the Union has great resources in the production of hides and skins. In 1930 the country contained over 48,000,000 sheep, over 10,000,000 cattle, and nearly 8,000,000 goats.

The resources of North Africa are much more limited. In 1930, in

² J. Schnitzer, "Hides and Leather," *Trade Promotion Series No. 50* (U. S. Department of Commerce), p. 145.

Morocco, Algeria and Tunisia together, there were only about 3,300,000 cattle, about 10,800,000 sheep, and 7,800,000 goats. The market for the hides and skins is chiefly in France. Practically every other division of Africa ships some of these commodities into international trade, but the amounts are relatively small.

Methods of Collecting and Marketing

In the more important countries, and particularly in those with an established meat-packing industry, the channels of trade are highly organized; the products flow directly, frequently with the intervention of only a few middlemen, from producer to ultimate consumer. On the other hand, in the more backward countries, the routes to market are usually interrupted by several sets of dealers who perform various functions, such as collecting, sorting, transporting, making contacts with the man further along, and so on, until the commodity is delivered at some shipping point.

For the great bulk of the hides sold in the United States, the process of marketing is about as direct as it can be made. Packers' hides are sold by producer to tanner, usually in large lots which are as nearly uniform as possible. The routine with the farmer, or other small producer, is more round-about. In many cases, the supply is sold to local buyers who sell to traveling dealers. These, in turn, sell to brokers or tanners. In Canada, packers either sell to brokers or export their product direct. With small producers, the process of marketing is substantially similar to that in the United States. In Argentina, the hide is cleaned, trimmed, graded, and salted before being sold to the trader. The latter takes care of the export business. Products from the small producer follow a round-about route but are eventually delivered to Buenos Aires for export. Sometimes, as in the case of Brazil, there is a department in the large packing establishments which undertakes the marketing of hides.

Marketing organizations within the leather-trading groups play an important part in Europe, in the disposal of raw materials. British conditions are complicated by the fact that there are no large packers, as in the United States. Slaughtering is done by local butchers, or in local slaughtering houses. In some cities hides are sold at auction conducted under the auspices of the Hides, Leather, and Allied Trades Improvement Society. In London, some sales are made in the registered hide markets by large coöperative companies, or by wholesale and retail butchers, or through dealers. Occasionally, unsalted hides

are disposed of direct by local butchers and slaughterhouses to local tanners.

The auction method prevails in a number of countries on the continent. The process in Germany has been described as follows: "The collection and sale of hides and skins is in the hands of the Association of German Hides and Skins Marketing Companies, which have branches throughout Germany. Hides and skins collected by this association are offered for sale at auctions which are held in practically all the principal cities. Companies prescribe the manner of take-off and request that the greatest cleanliness be observed during the killing and cutting process."³

From these highly organized systems in the larger countries the methods grade down to primitive forms where hides and skins are collected by perambulating buyers, who sometimes transport their purchases to a place of further sale. Sometimes the village merchant is the original buyer, exchanging, perhaps by barter, goods in his store for the farmer's or butcher's product. Thence, the hides, or skins, pass through various hands until delivered at a seaboard city for export.

Hide and Leather Trade of the United States

Although this country is one of the largest producers of hides in the world, the domestic supply falls far short of the demand, and dependence on the outside world is necessary. In 1930 this country imported nearly 400,000,000 pounds of hides and skins for which it paid about \$92,200,000. About half of this import was cattle hides, about a fourth goat and kid skins, and the remainder calfskins and sheep and lamb skins. By far the larger portion of the hides were imported from Argentina, Colombia, Uruguay, and Canada, but smaller quantities from half a dozen countries of Europe, and from Australia and New Zealand. Sheep-raising is the most important activity in stock-raising in the two countries last named, and their exports are chiefly sheep and lamb skins. The European countries are the chief source of calfskins imported into the United States; goat and kid skins come mainly from Asia with British India, China, Aden, and the Dutch East Indies being the main sources, but small quantities are imported from Europe and South America. Very few goats are raised in the United States, but since this country is the world's largest consumer it is necessary to obtain supplies elsewhere. As a rule, the original sources of such skins are small peasants who raise goats for milk and food. The process of col-

³ Schnitzer, *op. cit.*, p. 96.

lection is necessarily indirect because, except in a few instances, it is not possible to systematize marketing where the product is obtained under such a great variety of conditions. The United States exports certain quantities of all kinds of hides and skins, but cattle hides are the most important. Except for Canada, which is one of the largest consumers, the principal markets are in Europe.

Hides are manufactured into many forms of leather. According to our 1929 census, the total value of leather and its manufactures in this country amounted to \$1,900,000,000. The greatest market is at home. In fact, the export trade in the census year amounted to only \$42,900,000. The manufacture of boots and shoes is the most important division of the business, and production and finishing of leather occupies second place; but a great variety of products is fabricated from this commodity, such as belting, gloves, mittens, pocketbooks, purses, harness and saddlery, trunks, and carrying bags, not to mention them all.

Our exports include all these items, comprehending, also, many kinds of specialties. The trade is world wide, but due to the fact that it encounters severe competition from larger countries, there are various shifts from time to time both in volume and character of the trade. This is true not only with kinds of leather, but of footwear, which is one of the largest items in foreign trade. Now and then, a producer saves himself from the rigors of this competition, at least temporarily, by giving such particularity to his goods that they cannot be readily duplicated.

Moreover, leather and prepared skins, have been manufactured by people from time immemorial, and regardless of the state of the home industry, domestic manufacture, even among people with a simple industrial system, satisfies the greater portion of the local demand. Thus the exporter obtains only that part of the market which cannot be supplied by domestic industry, taking into account price and character of the goods.

As a rule, one of the best markets for American leather goods is near home, in Canada, Mexico, Cuba, and some countries of South America. In Asia our principal customers are Japan, the Philippine Islands, and China. The principal factors in the international leather trade are the United States, Germany, the United Kingdom, and France. In spite of its diversified industry, the United States is a consumer of foreign leather. This comes in mainly in the form of products of calf, kip, goat and kid skins. We also import a long list of other leather products, such as sole, belting, and harness leather, upholstery, bags, gloves, and

belts. In most cases these contain some feature which removes them from serious competition with the American output.

The Trade of Other Countries

In practically all countries which export hides and skins there is a tanning industry. In fact, most regions encourage the development of domestic leather making by imposing tariffs on leather and its manufactures. Most of these countries largely supply domestic needs from their own industries, and in some cases they enjoy a small trade with their neighbors. But their main exports are raw materials. In 1930 the export trade in such commodities by the seven leading countries was valued at \$100,100,000. This is shown in the table below.

EXPORTS OF HIDES AND SKINS FROM CERTAIN COUNTRIES (1930) ⁴

Argentina	\$38,400,000	Uruguay	\$ 9,700,000
Australia	15,200,000	Canada	7,700,000
Brazil	15,100,000	Colombia	3,300,000
New Zealand	10,700,000		
		Total	\$100,100,000

Due to price conditions, and sometimes to the organization for handling the business, and the character of the raw materials, some of importing countries of Europe also have a share in the export trade. This is notably the case with the United Kingdom where the reexport business often amounts to from one-third to one-half of the imports. Britain is the principal market for the exports of the dominions. She is also a large importer from the River Plate countries. Large volumes of such products are resold in other markets. European countries have a diversified line of staple leather manufactures, and to some extent

FOREIGN TRADE OF CERTAIN COUNTRIES IN LEATHER PRODUCTS: 1930 ⁵

	EXPORTS	IMPORTS
Germany	\$ 87,714,000	\$ 32,800,000
The United States	35,400,000	23,700,000
France	47,433,000	10,048,000
United Kingdom	39,843,000	66,873,000
Total	\$210,390,000	\$133,421,000

⁴ *Commerce Yearbook* (U. S. Department of Commerce), 1932, Vol. II, pp. 325, 348, 485, 598, 609.

⁵ *Loc. cit.*, pp. 85, 117, 289.

engage in the production of specialties. The foreign commerce of the four principal manufacturing nations is shown in the table on page 417.

Uses of Leather

While the boot and shoe industry is the greatest consumer of leather, this commodity enters into hundreds of manufactures which serve not only necessary uses, but comforts and luxuries. Substitutes constantly make an appearance; old uses disappear with the changing demands of industry, but new applications develop, although not rapidly enough to absorb the excess of plant capacity. Moreover, the great expansion of leather producing capacity since the war increased the severity of competition both at home and abroad.

In addition to boots and shoes, other staple uses are the manufacture of belting, harness and saddlery, trunks and carrying cases, and gloves. Leather also enters the production of various sporting goods, furniture, upholstery, hat-making, straps, belts, art wear, and hundreds of minor uses. In the era of the open car, automobile-makers were large consumers, but the demand declined with a change to closed vehicles. The coming of the automobile also deprived leather-makers of some of their market for harness, saddlery, and carriage leather. Changes in the bookbinders' art have worked in the same direction. On the whole, this industry has probably lost more than it has gained, although new uses have added something to retrieve the lost demand. Not only changes within the leather-consuming industries, but threats of substitutes are problems which producers in this field are constantly forced to meet.

Specialized manufactures require many varieties of hides and skins to meet their more or less exact specifications. This is one factor behind world trade in the raw materials. The great price ranges for given kinds of hides and skins are indicative of variations in quality.

Goatskins, of which the United States is the largest purchaser, serve many purposes. Leather produced from this material is of better texture than that obtained from sheepskins, and of greater durability. It is used in the production of glacé kid leather, gloves, upholstery, purses, pocketbooks, bags, belts, and other commodities. Horse hides are used in some countries. They are tanned for boot uppers, for patent leather, and sometimes for straps, thongs, aprons, etc. The use of pig skins presents certain problems both for packers and tanners. For one thing, it is difficult to remove the skin without taking also a considerable amount of fat which adds to the value of the meat. In addition,

for some kinds of pork the consuming public prefers to have the rind on the meat. This diminishes greatly the quantity of skins available for the tanner. Pig skins are suitable where a strong leather is required, as in the manufacture of harness, saddle and bag work. Various imitations of pig skins have found their way into the market. Since the species of animal which once was the source of chamois leather is now nearly extinct the word "chamois" is merely a trade name standing for skins prepared in a certain way. Now-a-days the raw material is sheep skins. Reptile skins are used to some extent in the manufacture of fancy articles and novelties. In fact, in 1931, the United States imported over 2,500,000 pounds of this material.

Tanning Materials

As we have already stated, hides and skins are converted into leather by the use of tanning materials. The vegetable world supplies a vast number of substances which may be used for this purpose, and these are obtained from practically every corner of the earth. In addition, chemicals are sometimes used alone, sometimes combined with vegetable extracts, in the production of tanning substances. The kind of leather desired usually determines the character of the tanning process.

The natural materials include barks, leaves, twigs, roots and fruits obtained from the vegetable kingdom. More specifically, among the barks are oak, hemlock, pine, fir, wattle, larch, mangrove, spruce, elm and birch. In the case of leaves and twigs, such substances as sumach, mango, mangrove and eucalyptus are used; among the fruits are divi-divi and valonia. Trees yielding the necessary barks are widely distributed over the world and thus for many regions supply an adequate local material. The entire world's supply of quebracho originates in Argentina and Brazil; sumach grows in Italy, Spain, Algeria, southern France, and America, although the quality for tanning purposes varies greatly from place to place; the best varieties of mangrove are obtained from the East Indies and Bengal, although supplies come from other places; divi-divi is the dried pod of a tree which grows mainly in some countries of South America; wattle is indigenous in Australia, but it has been introduced into South Africa where it has been a success. In addition to the use of tanning materials, various methods have been used by primitive people in curing skins, and in some instances these methods have been remarkably successful in obtaining pliability and softness in the fabricated product.

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PART IV

COMMERCIAL FACILITIES

CHAPTER XXVI

OCEAN TRADE ROUTES

By way of definition, a special study conducted by one of the bureaus of our Department of Commerce gives the following: "For this purpose (namely, of making a survey of the trade routes to and from foreign countries), the term 'ocean trade routes' denotes the movement of commerce between broad geographic areas; i. e. between our four coastal districts and several foreign regions, the latter being decided upon after an analysis of the nature of the traffic and the practical problems of transportation."¹ This report described some thirty routes traversed by American ships. This, of course, does not indicate all the routes touching American shores. In 1934 less than 35 per cent of the total water-borne imports and exports of the United States were carried in American vessels. This signifies that foreign lines included American ports, or districts, in their routes of travel.

Factors Determining Ocean Routes

Before the days of steam navigation, sailors picked ocean trails which were determined largely by physical conditions. Trade winds and ocean currents usually determined the greater portion of the routes. When winds and currents were the chief means of propulsion, the sailor was compelled to place his vessel in such channels. The day of wind navigation is by no means over, but it is of declining importance. With the use of steam-power, the navigator is at liberty to choose his course with reference mainly to distances to markets.

Under modern conditions of transport, ocean-freighting is less affected by physical conditions, assuming, of course, ocean waters as a physical fact, than freighting over the land. Occasionally, great land masses, as the American continents before the building of the Panama canal, and Asia before the era of the Suez, diverted commerce in directions other than the shortest routes, but these were exceptions rather than the rule. Even before the days of modern engineering, the in-

¹ A. L. Cricher, "Ocean Routes in United States Foreign Trade," *Trade Promotion Series No. 96* (U. S. Department of Commerce), p. 2.

genuity, sometimes the patience, of man, frequently made possible the surmounting of difficult barriers. This was true of Raton Pass, in Colorado, where the wagon trains were sometimes lucky to cover several hundred yards a day.

With respect to land travel, modern science, which has taught methods of tunneling mountains, leveling grades, and bridging streams, made it possible for commerce to move over rather direct lines. Important factors determining the routes are sources of commodities and markets in which the goods may be sold. These conditions, also, apply to ocean trade. Thus, the economic and physical conditions at, or in regions tributary to, the terminals are the most important factors in determining the routes.

Good harbors are essential. Further, to-day, with the large ocean vessel, extensive port improvements, including means of storage and devices for mechanical handling are among the requisites. In addition, the various factors which determine the localization of industry within a country operate with equal force for points along the coast. Among these is access to inland markets; this involves adequate transportation to and from the port. Such factors include, also, a hinterland amply supplied with physical resources, with labor supply, and with funds for the financing of industry and commerce. These likewise contribute largely to the importance of the port which serves this area.

Of greatest importance are the personal qualities of the people. The human resource is of the greatest significance in determining economic conditions. This includes enlightenment, industry, thrift, willingness to cooperate, and various other features known commonly as economic motives. Without these human elements, physical conditions, however favorable, are of no avail, as is amply illustrated by the condition of all the seaboard areas of America before the coming of the Europeans.

The Greater World Routes

A glance at the commercial map of the world reveals the trade routes radiating from thirty or more important centers. The network is densest in the north Atlantic. In countries bordering on this portion of the ocean is the greatest concentration of wealth and industrial enterprise in the world. Into this area flow great streams of raw materials from all corners of the earth and from the shops and factories of the north Atlantic countries move vast volumes of goods to supply the wants of people everywhere. The leading cities are the financial centers which provide the credit to keep commerce afloat, and the capitalists of this

region own a large part of world shipping. They also direct the course of industrial and commercial ventures whether at home or in distant countries. Some of the Atlantic cities act as entrepôts, gathering in large quantities of commodities which are not consumed in local industries but are redistributed to other countries which need them. In this respect, their function is to act as agencies for the assembling of diverse assortments of goods for distribution in such quantities as may be required elsewhere. For better or worse, the spirit which largely enlivens the commerce and industry of the world has its locus in this small quarter of the globe. The focusing of the great trade routes upon this area is a natural outcome of all these conditions.

From the western European ports, the steamer routes take five general directions. First, roughly east, or west, connecting the seaboard ports of America with those of the British Islands or western continental Europe. There is more traffic over these lanes than over any others in the world. They are the highways over which are transported a large percentage of the exports of both Europe and America; and since these are the greatest of all the commercial and industrial areas, the exchange is always in large volume. The east bound freight is composed largely of wheat, cotton, pork products, tobacco, gasoline and lubricating oils, various non-ferrous metals, such as copper, lead, and zinc, lumber, iron and steel, various kinds of machinery, and a rather wide assortment of manufactured goods, many of which are characteristic of our type of manufacture. Thus an appreciable amount of the east bound freight is composed of products of field, forest, and mine of which North America yields a superabundance. The freight of European origin is largely manufactured goods. The cargoes from Britain contain fabricated materials of cotton, wool, linen, and jute, leather, pottery, glass, tin, and of the reexports from the British Islands, raw cotton, hides and skins, raw rubber, and wool. From Germany the cargoes contain textile fabrics of cotton, wool and rayon, chemicals, raw and dressed furs, paper and wood pulp, China and earthen ware, toys, and musical instruments. The shipments from France are of less importance than from the two other countries just named. They include silk and rayon fabrics, clothing and lingerie, hides, skins, furs, leather manufactures, precious stones, and articles for collections. The Scandinavian countries ship westward mainly woodpulp, newsprint, some iron ore, and products of iron and steel, canned fish (from Norway), and some ferro-manganese and crude aluminum. In addition to these general classes, each country ships westward a considerable num-

ber of special products, the aggregate value of which in normal years is large.

A second great route over the north Atlantic extends from Europe to the southwestward through the Panama canal where it branches with routes up the west coast of North America, or to the west coast of South America, or continuing on in a southwesterly direction to Australia.

The outbound cargoes from Europe, destined for the west coast of South America, contain the typical list of manufactured goods in which the several countries claim a sales advantage. Vessels moving northward along this route take on chiefly mineral products from Chile, Peru, and Bolivia. These include copper, natural nitrates, tin, lead, zinc, and a miscellaneous assortment of goods, including rubber, coca leaves, quinine bark, sugar, raw cotton, alpaca hair, and wool.

Of the European countries, the United Kingdom is usually the largest importer from this section, and Germany ranks second; but important quantities of commodities are shipped to at least half a dozen other countries.

The Panama canal has greatly facilitated commerce with this region both in the case of the European countries and the United States. However, the latter country has received the greater advantage from this improvement. From American ports the route is now almost directly south, through the canal, to the west-coast points. Under the old conditions, vessels, say from New York, were required to make a long voyage to the southeast in the direction of Pernambuco, something over 3,000 miles, thence another long voyage along the eastern coast of South America, through the Straits of Magellan to Valparaiso, some 8,300 miles in all. Through the Panama canal, the distance from New York to Valparaiso is about 4,600 miles. Although the saving in distance to the European ports has not been as great, nevertheless, the canal has made possible a marked shortening of some of the routes. Since the opening of these works, there has been a great development in all the west-coast countries, a condition of which the United States has been the largest beneficiary. How much of this is due to the canal, and how much to other causes, it is impossible to say. But it is obvious that the canal has greatly economized in the expenses in dealing with this area.

As an indication of the importance of the trade over this route—the share of the European countries in the export commerce, in 1929, was

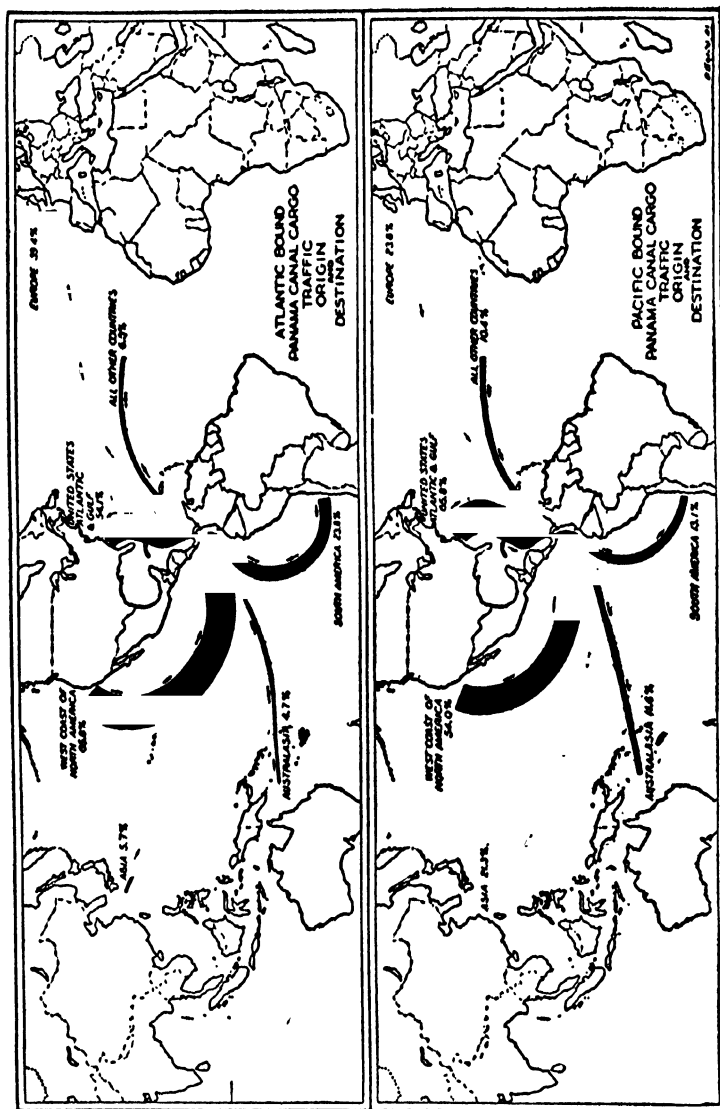
over \$200,000,000. Due to the depression, the value in 1934 was only one-third this amount.

A third important route through the north Atlantic extends from the western ports of Europe to the southwest, ultimately to the eastern ports of South America, including such gathering points as Pernambuco, Rio, Santos, and Buenos Aires. The south-bound cargoes contain the customary European manufactures; and over this route are transported to Europe chiefly large quantities of grain, mainly wheat and corn, but at times, sizable amounts of oats, barley and rye; also flour, linseed, chilled and frozen beef, mutton, hides, wool, edible fruits and nuts, coffee, tobacco, and cacao. At one time rubber was an important part of the east-bound cargoes. But since the development of the plantation product in the Near East, declining quantities of the Brazilian product have entered international commerce. As late as 1912, this country exported more than 30 per cent of the world total, namely, 41,600 tons; but in 1932 her share was less than one per cent. However, Brazil still retains her position as the most important exporter of coffee, in spite of the rise of competition from other sections, notably since 1920. Her share is about 60 per cent of the total for the world. The larger portion of the crop is sent to the United States, but various European countries are also large consumers.

Since Argentina and Brazil are industrially the most important countries in South America, their volume of trade outranks all the others. In the prosperous times, about 1929, the share of the major European countries in their export commerce was upwards of \$800,000,000. It dropped to about one-third this amount in 1934. But generally the volume of trade which moves over this lane in normal times makes it one of the most important commercial routes of the world.

A fourth route leading southward from the north Atlantic is less important. It connects European ports with west and south Africa. From Capetown, branches extend northeast to India, connecting with other lines extending to the Far East, to the East Indies, and to south-east Australia.

Finally, an important network of lines, probably the second most important in the world, extends from the western European ports, through the Mediterranean, thence through the Suez canal, and on to various Middle- and Far-Eastern points. The greater portion of the seaborne commerce destined for the Far East, and intermediate areas, moves over these various lanes. Connecting with the main routes are



Bureau of Foreign and Domestic Commerce

FIG. 30. TRAFFIC THROUGH THE PANAMA CANAL

others, which sometimes serve relatively small areas, but over which are collected considerable quantities of tonnage to be transported to several places along the line, where they are picked up by steamers moving over the longer routes.

Along this route are numerous coaling stations, among them Gibraltar, Port Said, Algiers and Aden. Further east, at Colombo, the lines diverge, some passing around the south of Australia, some proceeding on to Singapore, where there is further branching up the eastern coast of Asia, to Japan, and to the Philippine Islands; a more middle course leads to Batavia and thence to the southeastern ports of Australia, or to New Zealand. Along these routes are numerous entrepôts where goods are assembled for transport to more distant markets, or deposited for consumption in regions tributary to the port. Algiers, for example, serves this purpose; and the same is true of Gibraltar and Port Said, where goods are landed by vessels entering from either end of the Mediterranean which are destined for distribution to smaller ports along the Mediterranean and Black seas. Singapore is an important gathering point for the products of southeastern Asia, for some East Indian goods, and to some extent for products from China and the Philippine Islands. Colombo and Batavia both serve as entrepôts for considerable areas.

The Suez canal, first opened for traffic in 1869, serves about the same functions in commercial relations in the Far East as are performed by the Panama canal in the trade between the two coasts of the United States, and between the east coast of the United States and the west coast of South America. It directs commerce through regions which, for the most part, are productive of large volumes of freight, and, for the same reason, it adds to the importance of the numerous feeder routes. It obviates the long trek down the west coast of Africa, and up along the east coast, where, with but few exceptions, paying cargoes are not to be obtained. No doubt, the canal has been a factor in developing trade along the various routes that use this waterway; but it is impossible to estimate its contributions to this end, because other factors have been involved. It may have helped to maintain the trade position of some Mediterranean ports, the significance of which might have declined had the Far-Eastern trade moved entirely over the Cape route. But it is worthy of observation that Britain has been the chief beneficiary of the canal. This suggests that commercial organization, with all it implies, is more important in building up trade centers than are routes of travel.

In 1932, about 55 per cent of the net tonnage which passed through the canal was British. No doubt, a part of this dominance is due to trade relations with Middle- and Far-Eastern possessions. This commerce has been in the course of development for several centuries, and, in spite of the competition from the more recently industrialized countries, a large amount of this trade is still claimed by merchants of the British Islands; it is carried largely in British ships, and financed with British capital. Through the canal, the distance from London to Bombay is about 6,320 miles. By the route around the Cape it is about 11,220 miles. There is implied in this shortening of time of transport not only an economy in the use of vessels but also great saving in stocks of merchandise which traders must carry.

It might be added that in 1932 some 2,787 British vessels passed through these works, with a net tonnage of 15,721,200. The total net tonnage through the canal this year was about 28,340,200. German shipping was the next most important with 431 ships, with net tonnage of 2,505,800. In this year eighty-two American vessels passed through the canal. The tonnage was 525,700.

Ocean Routes in the Trade of the United States

On page 425 we referred briefly to the ocean routes across the North Atlantic. Leading from American shores, in the north seaboard at least, these lines form a considerable network with their terminals based upon about half a dozen ports. These lines point eastward in the direction of British and western continental ports; to the Mediterranean, in the direction of Capetown; to the east coast of South America, to the Caribbean ports, and to the Panama canal. The character of the cargo carried over these various routes depends partly on the nature of the industry in the country tributary to the port. With the northern ports it is chiefly general merchandise, wheat, flour, and at times, sizable quantities of other agricultural products either in the manufactured, or semi-manufactured form. From some of the southeastern and southern ports it is cotton, lumber, and petroleum products. Upwards of half the net tonnage which enters and leaves in foreign trade is claimed by the North Atlantic division. In this connection, the New York district is the most important in the United States. As a rule, more than 30 per cent of the foreign tonnage which enters and clears American ports passes through this area.² This is usually five or six

² Seaport total of entrances in 1931 was 60,420,000 tons, and clearances, 61,204,000. Of these New York's share was 23,026,000 tons and 23,635,000 tons respectively.

times the similar traffic that passes through the Boston and Philadelphia district combined.

The opening of the Erie canal in 1825 was one of the earliest factors in building up the foreign commerce of New York. Subsequently, that advantage was increased during the era of railroad-building. In the course of time, a huge commercial organization was developed for the purpose of foreign trading. The New York area has, in addition, the advantage of an enormous local market for imported goods, but its merchants are also middlemen for traders in all parts of the country.

In the South Atlantic district, Baltimore is the most important area. Charleston and Savannah occupy a minor position. In the Gulf district, Galveston and New Orleans are of about equal importance, measured in terms of tonnage entered and cleared.

At one time, New Orleans ranked with New York as a focal point for foreign trade. Before the railroads tapped the commerce of the Ohio and Mississippi, this port was practically the only channel through which the people of the Mississippi valley could market their goods and receive foreign merchandise in return. With the construction of canals, particularly after the completion of the Erie, the old routes of the interior began to change, and inland commerce, whether east- or west-bound, began to focus upon the Atlantic cities. Many persons in the Mississippi valley still entertain a vision of a restored river commerce, with a number of ports, both inland and on the Gulf, rivaling in significance those on the North Atlantic. It is doubtful whether this hope can be realized for many years to come. As one can see from a survey of the trade routes of the world, mere location on the channels over which trade passes to ultimate markets does not give a marked development to local trade centers. Physical resources, organized industries, skilled labor, and adequate supplies of capital, are also necessary. Moreover, with respect to Mississippi valley ports, a rival channel (from the Lakes to the Gulf Deep Waterway) is now in prospect. This is the Great Lakes-St. Lawrence Seaway. This proposed improvement will provide a more direct, and in other respects a more satisfactory, means of communication, to the great markets of the world than the Mississippi river project.

Compared with the Atlantic division, the Pacific area is under great handicaps in developing a large oversea commerce. Asia lies to the far west. India and China contain between one-third and one-half of the total estimated population of the world; and this says nothing of Japan, with over 65,000,000 people, and Netherland India with

upwards of 60,000,000. Unfortunately, mere numbers do not make a market. The people must have the power to produce, and sources of income. If these conditions were supplied, the Far East would be the greatest consuming market in the world. Portions of Japan are highly industrialized; but, on the whole, the purchasing power of the people is low. Measured in dollars, the per capita imports in 1932 were 6.1, compared with 10.5 for the United States. The consuming power of foreign goods is much less in the case of China and India. For the former, again measured in dollars, it was 0.8 in 1932, and for the latter 1.0. For Netherland India it was 2.6. It is evident from this that, in proportion to their numbers, these people are very small consumers of foreign goods. From the days when Asa Whitney wasted a fortune in promoting the building of transcontinental railways to the present, the Oriental markets have been of rather small importance compared with those immediately across the Atlantic and among our Latin-American neighbors.

Moreover, even granted large Far-Eastern consumption, the Pacific area of the United States does not possess the industries to supply the potential varied needs. The Pacific region could supply to trans-Pacific consumers large quantities of a considerable variety of farm products; but beyond this³ the export possibilities from local resources are limited. As an outcome of these conditions the Far-Eastern trade affords a relatively small volume of commerce to our western ports, compared with those along the Atlantic.

In the North Pacific, the trade lines lead over the Great-Circle route, some 4,500 miles from San Francisco to Yokohama (or from Liverpool to Yokohama, 12,300 miles; from New York to Yokohama, 9,700 miles; and from New York to Manila, 11,500 miles). Another route follows the east and west line, some 4,700 miles to Yokohama. And still another moves to the southwest to Honolulu, Samoa, and eventually to ports in Australia and New Zealand. At some places along the way, the routes through the Panama canal join with those just indicated, with Far-Eastern points as their ultimate destination.

Summary of Trade over American Ocean Routes

On the basis of value of cargoes, we may give the following as a summary of the commerce which moves over our ocean routes: "First in importance of these routes is that between the North-Atlantic district and the Havre-Hamburg range, accounting for 11.9 per cent of

³ And petroleum products from Southern California.

the total trade.⁴ In second place is the route between the North-Atlantic district and the United Kingdom, with 10 per cent. The next three, in the order of their importance, are: North-Atlantic district and Central America, north coast of South America, and West Indies, together accounting for 7.6 per cent; Pacific district and Eastern Asia (China, Japan, Philippines, and East Indies), with 7.5 per cent; North-Atlantic district and east coast of South America, with 6.7 per cent; and North-Atlantic district and India, Persian Gulf, Red Sea, and East Indies, with 6.7 per cent. Of the thirty-one routes dealt with, the first five account for nearly 44 per cent of the total trade and the first ten almost 72 per cent.”⁵

Development of New Routes

The history of commerce reveals the fact that lines of travel, once established, are by no means fixed for all times. This statement applies as well to land as to ocean transport. We have already observed, in the case of the United States, that the building of canals and turnpikes disrupted some of the old channels of communication, and that the railroads not only opened new routes but caused further difficulties with some of the old. Students of commercial history are aware of what took place in the directions of trade between Europe and the Orient, and even in Europe itself, as a result of the disruption of the old trade routes. Such changes are sometimes brought about by new means of communication and sometimes by the opening of new channels of travel, such as the Panama and Suez canals; but industrial changes within countries are factors of great importance in creating new routes and in forcing old ones into disuse. The rise of the industrial system in England and western Europe, from whatever causes, is one of the reasons for the concentration of many of the great trade lines of the world upon this area. Routes change to meet the needs of commercial regions, and many factors are involved in their rise and decline.

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⁴ For the year 1928.

⁵ A. L. Cricher, *op. cit.*, p. 5.

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CHAPTER XXVII

OCEAN SHIPPING

Ocean transportation bears the same relation to overseas trade as railroads and rivers, and sometimes, lake transportation, bear to the development of domestic commerce. While the foreign trade is only a small proportion of the total economic activity of any nation, it performs various useful functions without which, in many instances, home enterprises would be seriously crippled. This is notably the case with wares which are not produced within national borders, including raw materials which enter domestic manufacture and trade in various ways. It includes, also, the development of foreign market for the surplus of home industries, which often comprehends the sale of surplus raw materials of home mines and fields. The improvement of various ocean shipping facilities has contributed enormously to the rise of modern overseas commerce, and this in time has reacted favorably on domestic industries.

Ship-building

The great progress in ship construction, which culminated in the huge freighter or passenger carrier of to-day, had only begun in the early part of the nineteenth century. With the introduction of steam-power a great change came over the art of ship-building. It was said about 1880 that "within the memory of the present generation ship-building, like many other arts, has lost dignity by the extended use of machinery and by the subdivision of labor. Forty years ago it was still a 'mystery' and a 'craft.'"¹ Much of this knowledge had been handed down from generation to generation in traditional manner, and most often the craftsman practiced his art more as a result of insight than of science. Neither he nor his teachers knew the natural laws upon which success depended. If, on the one hand, the "art" of ship-building lost dignity, on the other hand, the "science" gained enormously by the new spirit which led to a study of all the factors involved in ship-construction and operation.

The introduction of steam navigation made necessary the study of

¹ *Encyclopædia Britannica* (9th ed.), Vol. XXI, p. 809.

many new factors which had not troubled ship-builders in the days of the sailing vessels. The requirements for increased carrying capacity, speed, and safety were matters of first moment, as was also the question of reducing the time and cost of transportation. The "Comet" was the first successful steam vessel built in Europe. It was constructed in Scotland in 1811-1812 and subsequently plied regularly between Glasgow and Greenock. Some five years before, Fulton had constructed the "Clermont" which was used on the Hudson river. About the time that steam navigation was being successfully introduced in Britain, Fulton, and Livingston began to experiment with this power for the navigation of the Ohio and Mississippi rivers. Their first boat, the "Orleans," passed down the Ohio and Mississippi in 1812, but it was not able to ascend the stream. It was subsequently used for traffic between New Orleans and Natchez until 1814, when it was wrecked by a snag near Baton Rouge. In May 1815, the "Enterprise," the fourth of the western steam-boats, reached Louisville from New Orleans after a trip of twenty-five days, the first to make the north-bound trip from this point.

With respect to ocean navigation, the construction of the "Great Western" in 1837, built expressly for regular voyages between Europe and the United States, marked a new era in ocean transportation. This ship was 212 feet long, thirty-five feet four inches broad, and had a displacement of 2,300 tons. It was propelled by paddles driven by steam-power.

Meanwhile, iron vessels were coming into use. Employed first in canal and river service, then for the coastwise trade, vessels of this description began to enter ocean trade about 1838. The largest iron vessel afloat in 1841 was less than 200 feet long. In 1843 appeared for "the first time the ocean-going steamship in its present form," built of iron and propelled by the screw. This was the "Great Britain," which was 286 feet long.

For some years the engines which drove the machinery of these vessels were small clumsy affairs which developed only several hundred horsepower, and were very wasteful of fuel and space. The new kind of construction, therefore, called for a study of design and mechanical make-up of the motive power. Meanwhile, builders began to give attention to the water resistance, stability and steadiness of the vessel when riding the ocean, speed, and various other matters which subsequently became of vital importance in the reduction of the cost of shipping and in increasing its safety.

The character of commerce, particularly since 1900, has made neces-

sary the introduction of new types of vessels for more specialized service, such as tankers for the transportation of liquids, particularly petroleum and its products, and refrigerator ships. The great migrations of people have also had an effect on types of ocean carriers, with vessels designed especially to transport the human cargo. In recent years, petroleum oils have become important as fuel for certain types of vessels.

The appearance of the steam-driven vessel produced profound changes on vessels operated by wind power. The proportion of ships depending on steam increased notably after 1850; but for various kinds of service the vessels using sails were still able to hold their own. Moreover, builders improved this type of craft in the light of better knowledge of actual operating conditions. Studies were made as to the disposition of the sails, the effect of wind pressures, and design of vessels. At the same time, the manufacture of all types of vessels became more and more of a factory operation, dominated by the principles of division of labor both in the construction of parts and in the fabrication of the completed vessel. Even in 1931 about 7 per cent of the vessels afloat were operated by sail; their tonnage, however, was only about 2 per cent of the total.

The Growth of Ocean Tonnage

The home ownership of merchant marine promotes commerce in several ways. In the first place, it gives ship owners and merchants command over their own mercantile organization, which they may sometimes use to good advantage in promoting the sale of home products. In the second place, ownership of ocean shipping is a source of income which in case of profitable operations is an addition to the wealth of the nation. Nor is this all. Freight bills for carrying the cargoes of foreigners are credits in favor of the home country. They are among the invisible items in the rather intricate international balance sheet. Such credits perform a useful function in making international settlements. They may help to discharge foreign debts, or in one way or another they may supply the nation with purchasing power with which to acquire raw or finished products in foreign markets. A study of this balance sheet for the United Kingdom reveals the fact that for years this country has had an unfavorable trade balance, but the invisible items, of which freight charges are among the most important, enables the country to pay for the excess of products which it imports without drain upon its bank gold reserves.

WORLD - 43,143,436	WORLD - 51,786,120	WORLD - 60,069,411
UNITED STATES 2,026,908	UNITED STATES - 12,406,123	UNITED STATES - 11,472,824
OTHER COUNTRIES 10,396,955	OTHER COUNTRIES 10,740,143	OTHER COUNTRIES 13,393,979
GERMANY - 5,134,720	ITALY - 2,118,429	GERMANY - 3,062,095
ITALY - 1,430,475	FRANCE - 2,963,229	ITALY - 3,150,246
FRANCE - 1,922,286	JAPAN - 2,995,878	FRANCE - 3,324,397
JAPAN - 1,708,386		JAPAN - 3,967,617

UNITED KINGDOM
20,523,706

UNITED KINGDOM
20,142,880

UNITED KINGDOM
21,698,253

1913 - 1914

1919 - 1920

1925 - 1926

FIG. 31. OWNERSHIP OF MERCHANT VESSELS (FIGURES IN GROSS TONS)

As an illustration of this point, the estimated net national shipping income since 1907 has never been less than \$400,000,000 a year, and at times it amounts to upwards of 60 per cent of the excess of British imports over exports. In 1929 this income amounted to \$631,000,000 and was about 35 per cent of the excess of imports over exports.² In the case of Italy "the aggregate contribution of the Italian merchant marine to the credit account of Italy's commercial balance, under the form of 'invisible exports,' increased in 1929 to over 1,000,000,000 lire (\$52,600,000."³ A similar condition described the credit balance of Germany before the war,⁴ and it now characterizes countries with a considerable tonnage engaged in foreign trade, including the Scandinavian nations and Japan.

For many years Britain has enjoyed the lion's share of the ocean shipping. Some persons have urged that the adoption of the free trade policy, expressed particularly in the repeal of the corn laws (1846) and the Navigation Acts (1849) paved the way for an enormous expansion of British trade. Undoubtedly free trade was a contributing factor, but many others were involved. Already Britain occupied the most favorable position in the foreign markets, due partly to the prior development of her commercial organization and to the growth of her manufactures. Increasing trade made necessary more and better ships; and in turn, the improvements in ship-building contributed a further advantage in the extension of overseas commerce.

Ship-building itself became a great industry, which, in one way or another, added considerable diversification to home enterprises. Moreover, Britain had an advantage in building iron ships in the form of cheap materials produced locally or obtained by import, a highly developed machine industry which was able to supply the ship-builders, and in thousands of men who had been trained in the technique of the industry. In addition, at this time, Britain had more surplus capital to invest in the shipping business than any other country. For years, sea traffic had been one of her major interests, and a considerable part of home enterprise was organized to exploit foreign markets. During the sixty years from 1791 to 1850 British tonnage increased a little more than two-fold. It was 3,565,000 tons in the latter year. But from that date to 1931, it increased nearly six-fold, amounting to 20,303,000 tons in the last named year. At this time more than 28 per cent of

² Jesse E. Sangstad, "Shipping and Shipbuilding Subsidies," *Trade Promotion Series No. 129* (U. S. Department of Commerce, 1931), p. 197.

³ Sangstad, *op. cit.*, p. 197.

⁴ Lippincott, *Economic Resources and Industries of the World*, p. 561.

the merchant marine of the world was owned in the United Kingdom.

As an indication of the change in character of the shipping it is worth while to indicate that while the number of vessels in deep sea commerce has remained relatively constant since 1895, the aggregate tonnage has increased more than two-and-a-half times. More than 65 per cent of this tonnage is owned in the five leading industrial nations, but it is by no means distributed in proportion to the foreign trade of these countries. The development of the world's merchant marine since 1895 is shown in the table below.

MERCHANT MARINE OF THE WORLD (THOUSANDS OF TONS)

YEAR	WORLD TOTAL	UNITED STATES	UNITED KINGDOM	JAPAN	FRANCE	GERMANY	ITALY
1895	25,086	2,165	12,118	280	1,095	1,885	779
1931	70,131	13,642	20,303	4,276	3,566	4,255	3,336

A considerable amount of tonnage is owned in a number of other countries. The shipping interests of Norway, Sweden, Netherlands, and Denmark are important, much larger in fact than one would suppose, considering the volume of domestic industry and trade. Norway gained her earliest advantage in ship-building in the days of the wooden vessels, when she was able to make use of her own timber in ship-building. But in recent years the Scandinavian countries also have been engaged in building chiefly iron and steel vessels. In fact, most of the tonnage of sailing vessels is now owned in Britain and the United States, and as we have indicated before, tonnage of this type is small in proportion to the total.

Merchant Marine of the United States

It is worth while observing that the tonnage of Japan, Italy, and the United States has increased notably in recent years. In our own case this has taken place particularly since the late war. In fact, the ship-building policy inaugurated at that time was the immediate cause for this development. In 1914 upwards of 90 per cent of the total foreign commerce of the United States was carried in foreign vessels. While the tonnage engaged in the protected trade (along the Great Lakes and coastwise) had increased greatly, that involved in deep sea transportation had declined almost steadily since 1860. In the latter, this country suffered serious handicaps both in the cost of ship-building and in ship operation. And our difficulties were increased with the ap-

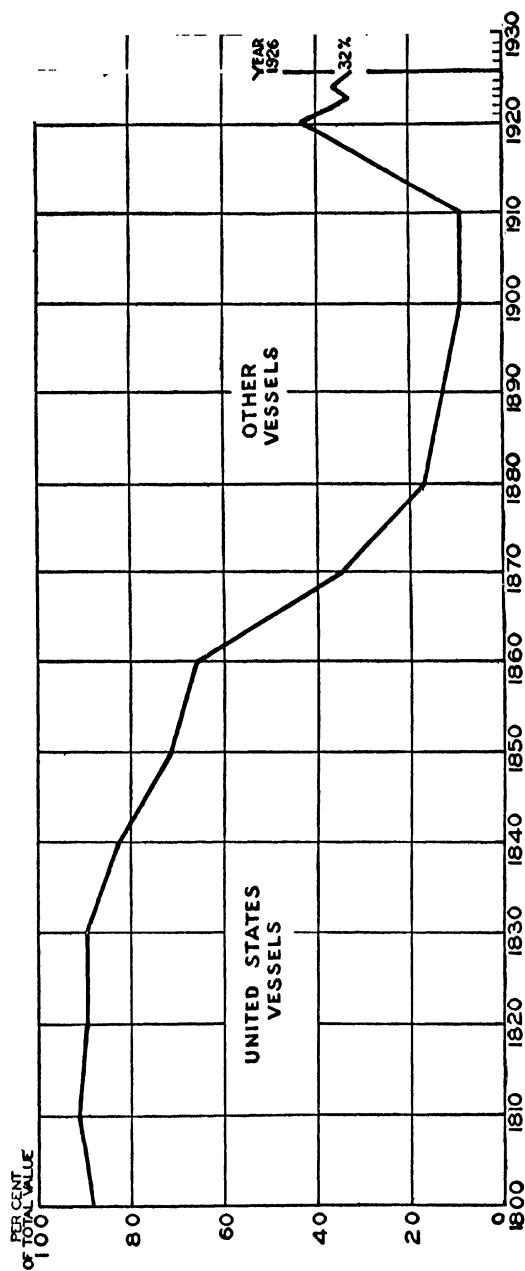


FIG. 32. CARRIERS OF UNITED STATES FOREIGN TRADE

pearance of the iron vessel, with construction costs considerably higher than in Britain. In actual figures, American tonnage engaged in foreign trade was 2,300,000 in 1860 and 783,000 in 1910.

The new policy adopted during the war changed this situation. By an act of September 7, 1916, Congress authorized the formation of the United States Shipping Board. This body was brought into existence largely for the purpose of developing a naval auxiliary and a merchant marine to meet the requirements of the commerce of the United States. It was authorized also to regulate water carriers engaged in the foreign and interstate commerce of the country. The Board was given power to create one or more corporations to acquire, construct, or operate merchant vessels. Acting under this authority, in 1917, the Board created the United States Shipping Board Emergency Fleet Corporation with a capital of \$50,000,000. All the stock was owned by the government, except a few shares held by the trustees to enable them to qualify for their positions. In this manner the government actually went into the business of owning and operating ships.

The great work of building up a merchant fleet during the war period was performed by this organization. In 1920 the Shipping Board's fleet was composed of 1,491 vessels with 9,200,000 deadweight tons. Most of these vessels were cargo ships, but a considerable number were for specialized purposes, such as tankers, refrigerator ships, and combination cargo-passenger ships.⁵

Since the end of the war, the Board has followed the policy of disposing of vessels under its control. The annual report of 1930 contained the statement that this action "brings nearer the day when all merchant tonnage flying the American flag will be owned and operated by private American interests." In fact, in this year only 466 vessels, aggregating 2,660,000 gross tons, were still in the hands of the government. The plan seems to be to "establish a number of steamship lines on routes deemed essential to American trade." Subsequently, when the service has been developed to a point where there is a promise of a reasonable profit the vessels are sold to private interests. Among the duties of the Board are the administration of certain provisions of the Jones-White Act of 1928, which made provision for construction loans and ocean mail contracts.⁶

⁵ Lippincott, *Economic Development of the United States* (3rd ed.), pp. 615, 616.

⁶ *Ibid.*, p. 616.

The United Kingdom

The maintenance of a merchant fleet is probably of much more importance to the United Kingdom than to any other nation. The reason for this statement is the absolute dependence of the population of the British Islands on the outside world not only for food supply, but for many industrial raw materials. Most countries, if necessary, could be largely self-sustaining, but not so with the United Kingdom. It has been said that Great Britain "produces enough wheat and flour to supply the population for only one out of every five days; ships bring supplies for the other four. The United Kingdom produces enough meat to supply the population for three out of every five days; upon ships depend supplies for the other two."⁷ Contrast this condition with the United States and we learn that this country produces more than enough of practically all the important foodstuffs for the maintenance of its people. The distribution of these supplies is only a matter of effective railway transportation.

Since Britain has an advantage in ship-building and operation, it has not been necessary, at least in recent years, for the government to give material aid to the shipping interests. In common with many other countries, Britain employs the postal-contract system, which, considering the many routes over which the contract ships operate, involves a considerable governmental outlay. Whether these may be regarded as subventions or as payment for rendering a service depends upon the point of view. In addition to the carriage of the mails, the government often imposes certain conditions which contractors must fulfill, and these are not necessarily connected with the mail service.

Merchant Marine of Other Countries

Many countries have been impelled to encourage ship-building in order to provide certain means of transportation over routes which would not interest, at least not regularly, the great shipping companies. Thus it happens that practically all nations which enjoy any considerable volume of overseas commerce control a certain amount of local shipping.

The development of a merchant fleet was a part of the general plan for the industrialization of Germany. Prior to 1870, unified action was impossible; but with the association of the states under one government, a comprehensive scheme involving the great divisions of industry was

⁷ W. R. Long, "Railways of South America," *Trade Promotion Series No. 193* (U. S. Department of Commerce), p. 193.

gradually developed. In this plan ocean shipping would not only provide a source of invisible income and thereby add to the country's purchasing power abroad, but the construction of ships would also assist the development of iron and steel, machinery, and other industries. The Imperial government "undoubtedly exerted a strong influence in the entire shipping movement, but this influence must be sought in indirect stimulation through proper placement of the shipping industry in respect of the national economy and in the official and popular sympathy with the development of sea power."

The development of the German merchant marine made rapid strides, notably after 1890. When the war came in 1914, this country ranked third in tonnage. But the old merchant fleet was practically wiped out by the terms of peace which ended the war. As reparation for the damage done by German submarines, this country was required to surrender most of its merchant ships, and, in addition, she was required to construct annually for three years upwards of 200,000 gross tons for the allied and associated governments.

The recovery of German shipping following the war was even more rapid than the building up of the original fleet. In 1920 the tonnage was only 673,000; by 1931 it had become 4,255,000, which was not far below the maximum amount in 1915.

In addition to the desire of local capitalists to obtain a profit from shipping ventures, there are frequently special reasons why a nation concerns itself with ship-building and operation. In the case of Italy, the "waters surrounding the peninsula, the islands, and the colonies (are considered a) medium of communication between Italian citizens." A transport system has been devised to use this medium. It insures the transportation of Italians under their own flag within the various parts of the dominions.

In some of its relations, the situation of Japan is like that of Britain. For one thing, the islands are dependent on the outside world for considerable quantities of foodstuffs and for certain essential industrial materials. The country, therefore, cannot trust to uncertainties in obtaining such supplies. In addition, this nation was eager for its citizens to share in the freight earnings of overseas commerce. Moreover, ship-building gave further diversification to domestic industries and contributed to the development of certain others. The military aspect was not overlooked because interest in commerce would add to the naval reserves.

Of all the industrialized countries of Europe, Belgium is practically

the only one which has not shown an active interest in the development of commercial shipping. Possibly one reason is that her proximity to the great ship-owning nations enables her transportation needs to be supplied without encouragement on her part. Possibly, also, other causes are "the disinclination of the Belgian people to seafaring life and the pre-war subsidizing of German lines by Belgium in order to draw transit trade to Antwerp." It was expected that this policy would contribute to the development of the port of Antwerp and add to the revenues of the Belgian railroads. The Belgian tonnage in 1931 was only 547,000, having increased only about 400,000 tons in the past thirty-five years.

Government Assistance

It is urged by one school of thought that if ship-owners of other nations can carry freight at lower rates than can be charged by domestic carriers, the nation gains by allowing foreign companies to transport the cargoes. Presumably, this theory prevailed in the United States from shortly after 1860 to about 1914. At any rate, little or no assistance was given to American ship-owners engaged in the deep sea traffic. One result was the decline of our overseas merchant marine. Taking the average of the years from 1911 to 1915, only 9.1 per cent of our exports and 12.5 per cent of our imports were carried in American vessels. Congress made a great change of policy in 1920, as indicated on page 442.

Nations are moved not only by economic, but by political, considerations in framing mercantile policy. This is notably the case with countries with colonies scattered over the world. If for no other reason, prompt and continuous communication is necessary. If the home government is lending encouragement to development in its possessions, there is an added reason for dependable ocean service.

National assistance to private companies is granted in a number of ways—by postal contracts, navigation, equipment, or construction bounties, by subsidies for the construction of special service steamers, such as tankers and refrigerator ships, and sometimes by tax exemptions. This last named policy operates in several ways; among them, for example, the free entry of ship-building materials. Occasionally, the assistance takes the form of loans granted either directly by the government, or in some approved form. In a few cases governments own and operate a portion of their merchant marine.

Shortly after the formation of the Shipping Board in the United

States, this government undertook to build up a merchant marine by government ownership and operation. We have referred above chiefly to the history of this enterprise.

Government contracts for carrying the mails is a very common practice among the nations. In substance, this seems to be a payment for a service; but such incomes often supply a considerable stimulus to shipping. The payments frequently run into large figures. For example, in 1931, the Postmaster General of the United States gave out the information that in 1930 the Department had paid out on ocean mail contracts under the Jones-White Act about \$13,000,000; he estimated that the payments would eventually reach \$30,000,000 a year. He was of the opinion that this was a ship subsidy granted for three reasons; to overcome the high cost of ship construction; to offset the high operating expenses, due in part to the higher wages paid by American companies than by their competitors; and to neutralize the subsidies granted by other countries. Many nations can display large bills for ocean mail contracts.

Navigation bounties are also designed as an encouragement for the development of a home merchant marine. The details vary from country to country, but, in substance, the arrangement provides a payment, often on the mileage basis, for the distance which the ship is operated during a given period. These various kinds of grants supply a considerable addition to the incomes of the shipping companies.

With respect to loan policy, the British Government in the Trade Facilities Acts (1922-1926) undertook to guarantee loans made for promoting industrial activity, including ship-building. The purpose of these guaranties was to stimulate certain industries and reduce unemployment. In the United States, the purpose of the loan policy was partly to maintain, and perhaps to perpetuate, an industry which had been built up to large proportions during the feverish war times, and partly to prevent our shipping from relapsing into the condition which had prevailed in 1914. Thus, the Merchant Marine Act of 1920 authorized the Shipping Board to set aside certain sums for loan purposes at low rates of interest. By an Act of March 4, 1927, authorization to increase the fund to \$125,000,000 and to make it revolving was granted. Under the Act of 1928 the fund may be extended to \$250,000,000.

The wisdom of these acts, particularly at this time, may be called into question. In the United States and abroad, the various grants in aid of the merchant marine have been a factor in the increase of surplus tonnage, which means a waste of capital invested in the indus-

try. This waste is particularly reprehensible because it adds to the financial burdens of the governments which employ subsidy methods.

Bunkering Stations

The shift from sail to steam-power laid upon the shipping world the new task of providing fueling stations at convenient places along the great channels of ocean commerce. Particularly since 1900, the development of the oil-burning steamer has made necessary further additions to the world's fueling equipment. Whether for coal or for petroleum products, the stations are now widely distributed, but the more important ones have been established at strategic points along the great ocean lanes. In many cases the loading is done quickly by mechanical devices. In Liverpool, for example, one establishment makes use of conveyors, hydraulic hoists, and tips and is able to load 760 tons per hour.⁸ Very few stations over the world are able to duplicate this performance, but many of them can supply vessels with remarkable speed. But, it might be observed, hand labor in the coaling of vessels has by no means passed out of existence. One can find many stations, particularly in the Far East, where the loading is done by coolies without the use of mechanical arrangements.

Ocean steamers consume large quantities of coal and petroleum fuels. Thus there has developed in the course of time a world-wide enterprise in operating stations and in keeping them supplied. Due to the nearness of some of her leading coal fields to the coast, to the development of her own foreign coal trade, and to the needs of her own shipping, Britain has enjoyed the largest share of the business of supplying bunker coal. In recent years some of the interest behind the control of foreign petroleum resources is to obtain fuel oils for the operation of ships.

Canals

The great land masses of Asia and Africa and the two Americas are joined by a relatively narrow strip of land. In either case transshipment across this area was too expensive for anyone to consider it; this was notably the case with bulky materials where it was necessary to cover long routes around the continents or to abandon the trade. The Suez and Panama improvements have worked a great change both in the volume and in the direction of commerce. They have

⁸ E. H. Adamitz, "Foreign Bunkering Stations," *Foreign Port Series*, No. 3 (U. S. Department of Commerce), p. 72.

greatly shortened the routes among important trading areas and have reduced the time of travel. Of equal importance—they have made possible great economies in shipping, and have enabled enterprise to develop in parts of the world which would have remained closed without prompt ocean service. Further, because of prompt deliveries, they have made possible a great reduction of idle stocks and have enabled merchants in many parts of the world to conduct business with a minimum of trading capital.

There was nothing new in the idea of joining the waters of the Red Sea with those of the Mediterranean. In fact, authorities could be found to support the statement that such a water communication over the Suez route was in existence before the Christian era⁹ but was allowed to fall into disuse. Interest in a new enterprise seems to have been revived towards the end of the eighteenth century; but the actual execution of the project was a part of the labors of M. de Lesseps, a French engineer and promoter. Work on the canal was begun in 1860 and completed in 1869. Six years later more than 1,490 vessels had passed through this waterway, and the number had more than doubled by 1885. The canal proved to be inadequate to accommodate this traffic and for a time there was much discussion of rival canals to connect with the Red Sea. But eventually, with the widening and deepening of the works, after 1886, these other plans were abandoned. It was fortunate for the success of the enterprise that its completion came in the era of the steam vessel; otherwise it might have been of little or no use to commerce. The winds near the southern entrance of the canal frequently give the masters of sailing vessels unlimited trouble, and for this reason the waterway is not a certain convenience for this type of vessel.

The purpose involved in the construction of the Panama canal was not only the shortening of ocean routes among the great continents, but facilitation of communication between the two coasts of North America and the west coast of South America. A study of the traffic charts of this canal reveals the fact that by far the greatest volume of freight moves between the east and west coast of the United States. In 1930 about 21 per cent of the west-bound traffic, from both Europe and the United States, was destined for Asia, and about 11 per cent for Australia. In fact, in the order of importance the canal has wrought its greatest effects on the commerce between the coasts of the United States; between Europe and the east coast of the United States,

⁹ *Encyclopædia Britannica*, Vol. IV. p. 789.

and the west coast of South America; and finally, between Europe and the east coast of the United States, and the Far East.

With reference to the commerce of the United States, the west-bound traffic is made up largely of fabricated goods destined for consumption in all the areas around the Pacific. The trade in the reverse direction is composed more largely of raw or partly finished goods. Thus the Atlantic to Pacific tonnage is always smaller than that in the other direction. To illustrate, in 1931 the Atlantic-bound tonnage was 18,400,000 tons while that moving toward the Pacific was 6,680,000 tons.

The first step which led to the actual construction of the Panama canal was the proposal of a treaty with Colombia in 1903 which gave the United States certain rights across the Isthmus of Panama. This treaty was rejected by Colombia; Panama revolted and its independence was promptly recognized by the United States. Thereupon, a treaty was negotiated with the new country. Preparatory work was begun in 1904 and commercial traffic was inaugurated in August, 1914. The total costs of the canal to 1914, excluding the costs of fortifications, administration, etc., was about \$365,000,000. The traffic through the Panama canal has grown steadily since it was first opened. In fact, in the years from 1917 to 1931 the tonnage increased about four-fold, amounting to 34,200,000 tons in the year last named.

These two canals are the outstanding cases of artificial waterways constructed in recent years. But this period has also witnessed the completion of a considerable number of other enterprises, some of international, some of national or even of local, scope. Some have failed to realize the expectations of their promoters. In this class belongs the Erie canal, completed originally in 1825 before railway-building had gotten under way. In recent years the State of New York has spent large sums in widening and deepening the canal, but even with the improvements it carries a relatively small volume of freight. From the point of view of tonnage, this waterway reached its greatest usefulness in the years from 1860 to 1890, when the movements of freight were between 5,000,000 and 6,000,000 tons a year. In 1931 the amount was only 3,700,000 tons.¹⁰

The Sault Ste. Marie canal, near the outlet of Lake Superior, presents a very different picture. It serves one of the greatest traffic areas in the United States, and contributes in one way or another to the enormous market which arises along the coast of the Great Lakes. It makes

¹⁰ For all New York canals.

possible cheap transportation access to great resources of iron ore, copper, timber, and some agricultural products; the east-bound commerce which moves through the works is made up largely of these commodities.

The original canal was completed in 1855 but it has since been deepened and improved. From the point of view of tonnage, it is the greatest artificial waterway in the world. In the prosperous times from 1925 to 1929, the freight transported through these works amounted to from 80,000,000 to 90,000,000 tons a year. Due to the fact that the freight which originates in the central northwest is bulky material, the tonnage of the east-bound freight is three or four times as great as that which moves in the other direction.

Several other such works have been completed in recent years, such as the Cape Cod and the Houston Canals but they are of not much more than local importance. Other greater enterprises have been proposed, such as the Lakes-to-the-Gulf deep waterway, and a canal to connect the Great Lakes by the St. Lawrence route with the Atlantic ocean, but their completion is a matter for the future.

Several European countries have either canalized streams, or have made use of canals to join rivers. These works add materially to the facilities for local commerce. Of somewhat greater importance is the Kiel canal which cuts off a number of miles of troublesome navigation between the Baltic and the North Seas.

The oceans, and some of the lakes, provide the cheapest means of transportation in the world. No expense is involved in the maintenance of a "right of way." The only material costs are in the construction and operation of vessels and in the improvement of ports and harbors. This is not the case with rivers, which can rarely be made deep enough to accommodate sea-going vessels without great expense, and which must constantly be dredged, or otherwise kept clear for communication. Varying depths of channel due to seasonal conditions, the expense in maintaining river terminals, and often the need of several transshipments of freight on its way to market, are serious handicaps in the development of this type of transportation. Rivers were important before other means of transportation were provided. Some of the great streams, such as the Mississippi, the Amazon, the Orinoco, the Platte and its tributaries, the Murray, have afforded an entrance into continents, sometimes a great distance in, as with the Amazon which flows almost across South America. But such streams usually lose their importance, except upon occasions for bulky freight, when

other means of transportation have been provided. When interrupted by falls or rapids, as is often the case, they must be supplemented by railroad or canals around such obstructions.

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CHAPTER XXVIII

OTHER MEANS OF COMMUNICATION

The age of Watt, if steam-power is to be regarded as one of the leading features of that era, began shortly after 1780. By this time Watt had completed most of his major inventions which put the steam engine in the modern form. Meanwhile, other men were adding useful features which in time were incorporated into this machine. The sole use of the steam engine before Watt's day was in operating water pumps. At that, the engine was a clumsy device operating partly by atmospheric pressure and partly by steam. It was slow-acting, wasteful of fuel, and inapplicable to general power uses. Watt changed all this.

Railways in England

As with other inventions, steam-power was adapted shortly to uses other than the one for which it had been originally devised. It was soon developed for power uses in factories. Although there were many doubting Thomases, including perhaps Watt himself, a few thoughtful men predicted the time when it would be applied successfully to land traction. We have seen already how steam-power was developed for ocean navigation.

The man who contributed more than any one else to the development of the locomotive was George Stephenson who, in 1814, constructed a device which had power enough to drag freight wagons loaded with coal a short distance to tidewater. Most of the pioneering work in the development of steam traction was done in England, and for a number of years the railway mileage in that country exceeded that in any other. In 1825, the locomotive was adopted on the Stockton and Darlington railroad. The introduction of this device elsewhere was only a matter of time. In 1829, Stephenson's "Rocket," used for the first time with the opening of the Liverpool and Manchester railroad, made use of three inventions which greatly increased the effectiveness of the locomotive. These were the multitubular flue in the boiler for the purpose of accelerating the generation of steam, the blast pipe through which waste steam was discharged into the chimney thereby

increasing the draft, and finally, the direct connection of the steam cylinders on either side of the engine with the driving wheels on the axle. These improvements were basic, paving the way for the modern locomotive.

The chief significance of the building of railways was that they opened opportunities for the development of domestic markets with many important industrial results as the outcome. For one thing, this made possible the enlargement of manufacturing operations, encouraged the further use of power in factories, and increased the effectiveness of both the manufacturing and commercial organization. Markets expanded not only to local boundaries, but became national, and even international in scope. In the course of time, better transportation made possible the placing of industries where they could be carried on to greatest advantage. Thus there developed market areas which specialized in certain products and exchanged with other areas which were following the same principle of specialization. In time, this process was extended more and more into foreign trade. All this, in turn, made possible lower costs of production and a wider distribution of goods.

In specific areas, like many of those in the United States, the cost of transportation before the appearance of railways, tended to prohibit the conveyance of goods long distances inland. Communities which did not possess access to rivers or to the coast were largely landlocked, and were forced to depend upon their own productive effort for most of their goods. Until the introduction of steam-power, freight charges were high for every type of transportation. In 1803, the freight from Baltimore to Pittsburgh was about \$4.50 per hundred pounds, and from Philadelphia about \$5.00. To Lexington, Kentucky, the charge was from \$7.00 to \$8.00. The rates were affected by seasonal conditions, being higher at periods of the year when road conveyance was more difficult.

With reference to England, before the coming of the railroad era, inland transportation presented many difficulties. It was almost impossible to keep roads which bore heavy traffic in good repair. In some regions, where heavy haulage was necessary, ruts were sometimes filled with stone, and rails of timber were laid on level surfaces. In the course of time, these developed into tramways constructed of wooden beams overlaid with bars of iron. At best, this system was only a makeshift, but it was all that could be done under the circumstances. The building of railroads was by no means as rapid as one

might have desired. By 1854, twenty-five years after the construction of the Liverpool and Manchester line, the mileage in England was only 8,053 miles. Nearly one-fourth of this was single track. But, at that, building probably proceeded as rapidly as physical and financial conditions would permit. In England up to 1854, the average cost of construction was about \$180,000 a mile.

Railroad-building on the Continent

In France general interest in railways did not begin until the decade from 1830 to 1840. In 1833 the government outlined a plan of development covering the whole country. In some cases the State gave financial assistance. Shortly after 1830, Belgium projected a system to be owned and managed by the state. Work was actually begun in 1833. Subsequently, the construction of lines was left largely to private enterprise. In what is now Germany, a national policy was not possible. The various states followed their own ideas. Not infrequently rivalry among the political divisions resulted in the construction of lines which, while they served the needs of the states in question, were not designed to give all of Germany an effective means of communication. The first German line was opened in 1835. Prussia gave pecuniary assistance to the railroad-builders, reserving the right of state control. About 1848 this state began to construct railways of its own.

Outside of Europe, and excepting the United States, railroad-building proceeded at only a slow pace. Most countries in the world were poorly equipped in every way for the development of such enterprises. They lacked technical skill and capital, and except for limited areas, the promise of paying traffic was not sufficient to encourage investment in the railway business. Outside the more densely populated nations, railroads were often built for the purpose of developing new areas, and this meant risk for stockholders and a long period of waiting for returns on investments. In fact, this condition forced a number of countries either to construct railways themselves on borrowed money, or to guarantee bonds of private builders. A large part of the mileage over the world was constructed on capital supplied from Europe.

Railway-building in the United States

In this country, also, much of the early mileage was built in advance of actual needs. This was particularly true of the transcontinental lines. With us, in many cases, the policy was not to construct lines to satisfy present transportation requirements, but as a means of opening the

country for development. Such a policy involved a great speculation from which investors hoped to get a return at some remote date, meanwhile, perhaps, receiving an occasional profit, or taking a loss, from the fluctuation in the value of railway stocks.

Moreover, an important factor in the early extension of lines was the competition of seaboard cities for access to the growing trade of the interior. This contest had been started in a small way during the canal era, when the Erie gave New York City the great advantage in tapping the buying power of the prospective Great Lakes market. Other cities, such as Philadelphia and Baltimore, and later Boston and Charleston, realized the new opportunities which the railroads offered. Moreover, physical conditions favored the extension of lines. Once railway-builders had surmounted the difficulties of the Alleghany mountains, construction in the Mississippi valley was a relatively simple matter. While American railway engineers had received valuable suggestions from the prior work in Europe, many problems were local and had to be worked out under local conditions.

The first division of the Baltimore and Ohio, our first line, thirteen miles long, was opened in 1830, and the line was completed to Frederick, a distance of seventy miles, in 1831. Connection was established with Washington in August, 1835, and with New York four years later.

Among the early problems were those of suitable motive power, track-construction, grading, gauge, effect of friction of drive-wheels in enabling the locomotive to pull the load, and the surmounting of hills. In addition, there were questions regarding the sources of funds. The early railways encountered the opposition of plank-roads, turnpike, and canal companies, which regarded the newcomer not only as a competitor for financial resources, but for traffic. Thus, turnpike and canal companies were often able by litigation to delay the construction of railroads.

Shortly after the beginning of the Baltimore and Ohio, railroads were projected in many parts of the country. The Mohawk and Hudson, the earliest forerunner of the New York Central, was chartered in 1826, and construction was begun in 1830. Subsequently, a number of short lines built by various companies stretched towards Buffalo, reaching that place in 1842; by this time lines had been built from New York and Boston to Albany.

Chartering of railroads in Massachusetts began in 1830. In Pennsylvania, the Columbia road, connecting Philadelphia with the Susque-

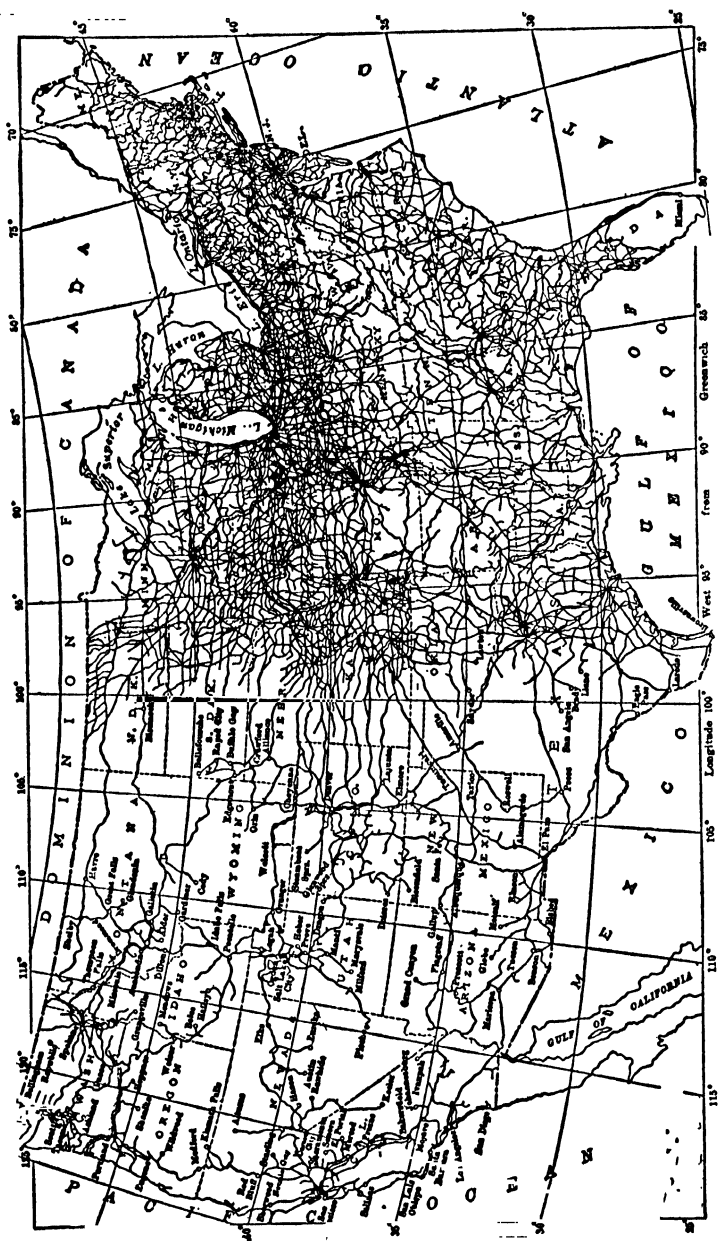


FIG. 33. THE RAILROAD NETWORK OF THE UNITED STATES

hanna, was completed in 1834, the first link in the present Pennsylvania system. In the South, the Charleston and Hamburg, chartered in 1829, had 137 miles in operation in 1834, at that time the longest line in the United States. The western States had begun to project railroads during the craze for internal improvements previous to 1837. In 1840, upwards of 130 miles had been built in Michigan, seventy in Ohio, ninety-five in Indiana, and twenty-six in Kentucky.¹

Meanwhile, the seaboard cities saw unlimited opportunities in the new system of transportation. Railroad-building had become the order of the day, and promoters in Boston, Charleston, Savannah, Mobile, and New Orleans, all of which cities had been excluded for the race to tap the markets of the interior, began to evolve plans to obtain an increasing share in the trade of the country. All this enterprise has been so far successful that the railway mileage of the country increased from about 4,000 miles in 1840 to over 30,600 miles in 1860.

All this work placed a great drain on the capital resources of the country. The raising of funds was a problem in itself. Many of the proposed lines had yet to demonstrate an ability to earn income; in many cases, purchase of stock was looked upon as rank speculation, with certain loss confronting investors. In some instances the States themselves built the first railroads, obtaining the funds from the sale of bonds; in others, the States aided the railroads by guaranteeing their securities in whole or in part. Cities and countries could sometimes be counted on for subscriptions, and farmers along the proposed line frequently subscribed because a railroad meant an outlet for their products and a rise in the value of land; their loss would not be complete if the railroad later became insolvent.

Still greater building enterprises were ahead. Until nearly 1870, there was no line to the Pacific coast. Such railroads had been discussed as early as the decade from 1840 to 1850; but Federal aid was needed, and it was impossible for Congress to agree on routes and eastern terminals. Finally, in 1862, a bill was approved providing for the construction of the Union Pacific and the Central Pacific. In addition to large allowances of public funds, Congress also made extensive grants of land permitting the roads to issue bonds to the amount of funds supplied by the United States. These securities were to enjoy the first lien on the roads, the Government's claim ranking second. Subsequently, other grants were made to Pacific railroads.

¹ Lippincott, *Economic Development of the United States*, 3rd ed., p. 250.

Railway Mileage of the World

The thirty-five years from 1825 to 1860 proved to be only a period of beginning. The total railway mileage of the world in 1840 was estimated at only 5,400; it was 24,000 miles in 1850, and 67,400 in 1860. Nearly half of this was in the United States and the remainder chiefly in England, Germany and France.

Many factors combined to make the next seventy years the real era of railway progress. By 1860 railroads had proved their worth not only as useful adjuncts to rivers, canals, and to ocean transport but as freight carriers of independent merit. In most cases they had shown themselves superior to rivers and canals. Their service was more regular, and less interrupted by seasonal conditions. They provided through transportation from point of origin to destination without transshipment. Deliveries were much more rapid than was possible with internal waterways.

Further, most of the fundamental technical problems were understood, and were on their way to solution. Moreover, the iron and steel industry had developed to a point where it could supply promptly the needs of railroad-builders. With the growth of the factory system, wider markets and more distant outlets were required for the growing surplus. This, then, was a period of rapid accumulation of capital, much of which was used not only for the opening of mines and plantations at home and in distant countries, but for the construction of lines which made these new resources available.

Active colonial development by the leading nations required the services of railroads, which, in turn, promoted industrial expansion in the dominions. Much larger volumes of freight appeared in markets and the new system of transportation was called into use to render the service of carriage. Moreover, the railroad business was an enterprise from which the investor could eventually expect a profit, just as in manufacturing and trading, and consequently it obtained its share of the new funds.

In the United States, where railroad-building was more rapid than in any other part of the world, the movement of population into the unoccupied territory not only opened new resources but offered prospects of new markets which the merchants in the larger seaboard cities were eager to grasp. The relatively flat, open country of the Mississippi valley made possible cheap and rapid construction. With

the development of domestic industries, the United States was able to supply the needs of the railroad-builders.

Motivated by these forces, railroad construction moved in long strides. In 1880, the mileage of the world had increased to 224,900; it was about 500,000 miles in 1900, and upwards of 772,000 miles in 1930.

Distribution of the World's Railway Mileage

The capacity of a region for industrial development rather than density of population was the deciding factor in supplying a country with railway facilities. If numbers were the important consideration, portions of India and China would be the location of the most extensive mileage in the world. There is a close connection between the intensity of industrial development and the concentration of railways, although lines have been constructed into areas with a small number of people to the square mile. This is true of some of the agricultural areas of the United States and Argentina. On the other hand, the railway net is thickest in the regions of greatest industrial development. This is shown clearly on the maps of the United States and Britain. There are various anomalies, however, in the railway maps. In some cases, many thousand miles of line have been built across barren territory to tap valuable resources, or markets, beyond. This situation is found in the western portion of the United States, and particularly in the newer railroads that bring down the minerals from the Belgian Congo to ports in Angola, in southwest Africa.

The mileage is by no means equally distributed over the world. North America contains more than any other continent. The distribution by grand divisions is shown in the table below.

RAILWAY MILEAGE OF THE WORLD (1930) ²

DIVISION	MILEAGE
North America	319,097
Europe	249,466
Asia	83,834
South America, including Central America and the West Indies	67,134
Oceania	30,915
Africa	21,684
Total	772,130

² Average miles of line (first track operated). See *Commerce Yearbook*, 1932, Vol. II, p. 701.

By far the greater portion of the mileage of North America is in the United States. About 42,000 miles are in Canada, and 14,400 miles in Mexico. In South America the railway net is thickest in the territory tributary to Buenos Aires and Rio de Janeiro. In fact, the greater portion of the railways of this continent make connection with these two cities. Elsewhere, the lines are relatively short and disjointed, frequently constructed of different gauges, and are designed to connect points of the interior with some port. Railway-building on the west coast of South America presents unusual difficulties due to the rugged mountain chains. Except for a line from Buenos Aires to Valparaiso, this chain has never been pierced by a continuous line, although roads have been projected from the east coast to certain ports in north Chile and Peru.

The greater portion of the mileage of Asia is in India (42,000 miles), Japan (13,000 miles), and China (9,400 miles). In India, several trans-peninsular lines connect the ports of the east and west coasts, and it is possible to travel over several routes from northern India to the southern extremity of the country. In China, the distant interior has no railway service; the mileage is mainly in the eastern part, and much of it connects interior points with the coast.

In Africa, over 60 per cent of the mileage is in the Union of South Africa (13,400 miles). In recent years, the opening of the mineral regions in North Rhodesia and in the Belgian Congo have been the occasion for extending the lines northward, so that it is now possible to travel some 800 miles from Cape Town or Port Elizabeth into the southern interior. A number of lines connect the main stem with ports both on the Atlantic and Indian Oceans. In other places on this continent, railway-building (except in Egypt) has not gotten beyond the stage of various roads designed to bring down cargoes from the interior to the coast.

Railroad vs. Water-Borne Commerce

The railroads now outrank by far the waterways as means of transportation. This is true even of the United States which has the advantage of an extensive system of interior rivers, of the Great Lakes, and of a long coast line. In 1930, about 77 per cent of all our commerce, domestic and foreign, was represented by railroad carriage.

In other countries with a well-developed railroad system, the percentage of rail traffic in the total is not far below that of the United States. Since much of the water-borne freight is due either directly



FIG. 35. ARGENTINA AND URUGUAY

and where necessary, world-wide market information. With this service, business men can adjust affairs promptly to changing conditions. Prices of commodities sold in the world market, rates on bills of exchange, trade conditions in many areas, all are available almost immediately after a change of condition has taken place. All this tends to make world markets free and open, reduces the uncertainties of trading, and makes possible more intelligent judgment concerning market conditions. Without such service, money rates, the prices of wheat, cotton, rubber and tin, not to mention all the commodities, would be dominated by local conditions. Now, with telegraphic news, the world might become one market, at least for the great staples, were it not for national restrictions placed on buying and selling.

The idea of using electricity for telegraphic purposes dates back to the last quarter of the eighteenth century; but it was not until the discoveries of Galvani and Volta that scientists came to the conclusion that voltaic electricity could be used for this purpose. Subsequently, the experiments of Oersted and others revealed the action of currents on a magnet. The way was now open for some one to make commercial application of this idea.

The most successful outcome was the invention of Samuel Morse. He completed a crude model in 1835 which was soon perfected in its essential details. Construction of the first line was delayed because the inventor was unable to obtain financial assistance. Finally, in 1843, Congress made a grant of \$30,000 for the construction of a line between Washington to Baltimore. Although the inventor had failed to interest promoters at once, they were quick to see the value of the telegraph after its success had been demonstrated. Problems of construction were few compared with those of railroad-building, and the costs per mile were small. As a rule, private companies could undertake the work without aid from the government. As a result, within twenty years after the first line was stretched, the country was fairly well-supplied with telegraph service. In 1845, a line was run from New York to Philadelphia; in 1846-1847, New York and Boston, New York and Albany, and Buffalo and Albany were connected by telegraph. The following year Ezra Cornell began the extension of lines from New York to Chicago by way of Cleveland, Toledo and Detroit.

Construction and operation between the Mississippi and the Pacific encountered difficulties not met with in the country to the east. Provision had to be made for protection against wind and storm on the plains, and possibly against the depredations of the Indians and dam-

age caused by buffaloes. An important consideration was the operation of lines across thousands of miles of uninhabited country. However, both for political and economic reasons, speedy communication with the Pacific was necessary. Thus the Government was willing to offer a subsidy to the company that constructed the line. Under this stimulus, Western Union extended the telegraph to the Pacific in 1861.

Related kinds of electric communication have been developed along with the telegraph, including notably the burglar and fire alarm and ticker service, employed largely in grain and stock exchanges and in brokers' offices. From the beginning, the telegraph has been a valuable asset to the railroads in directing railway service.

Contemporary with the development in the United States, was the prompt expansion in a number of the European countries. In 1860, the world contained about 100,000 miles of telegraph line; in 1880, nearly 440,000 miles; and in 1910, about 1,300,000 miles. In 1930 it was 7,119,600 miles.³ As with the railroads, this service is very unequally distributed over the world. About 32 per cent of the total is in the United States, and about 31 per cent in Europe; Asia contains less than 9 per cent, and Africa less than 2 per cent.

Telephone

As with other discoveries, inventors in several countries were experimenting with devices for sound transmission. About 1874, Alexander Graham Bell hit upon a method which has proved to be basic for most of the service in use to-day. Once the possibilities of this device were understood, the use increased rapidly. It was estimated in 1895 that there were about 339,000 telephones in service in the United States. The number in 1930 was about 20,000,000. The first instruments used only a single wire connecting two stations; the next step was to bring the various stations into contact with each other by means of a local exchange. Improvements in this respect were so rapid that by 1885 there was an exchange in every city of the United States with a population of over 10,000. Many of these exchanges, however, were small affairs; in the course of time, central stations in adjacent towns were connected, and telephone service was later extended over long distances. One of the first lines of this description was from New York to Chicago, formally opened in October, 1892.

The use of the telephone is even more extensive in the United States, as compared with the rest of the world, than the telegraph. In fact, in

³ Wire miles.

1930, 59 per cent of the wire mileage and 57 per cent of the instruments were in this country. In Europe, the greatest use is in Germany which has a little less than 10 per cent of the total instruments in the world; the United Kingdom was next with between 5 and 6 per cent, and France with about 3 per cent. In Asia, except for Japan (809,400 instruments), no country has as many as 60,000. About 75 per cent of the instruments in South America are in Argentina and Brazil. It is evident that the telephone is an instrument which poorer countries cannot afford. This statement, however, does not subtract from the industrial and commercial importance of the service. Although somewhat more limited in scope, the economic advantages are similar to those of the telegraph; but, in addition, for people who can afford the service, telephones play a large part in the social life of a community.

Wireless Telegraph

Although not as extensive in its industrial applications as the telephone and the telegraph, the wireless has contributed in a substantial way to the world's commercial facilities. The practical development of this new form of communication dates from about 1888 with the experiments of Heinrich Hertz of Bonn, Germany. Although many inventors have contributed necessary improvements, probably Marconi, more than any one else, has done the most to commercialize the wireless. In 1896 he took out a British patent. The system had been so far developed by 1903 that it became possible to communicate across the Atlantic. In that year President Roosevelt sent a message to King Edward VII of England. Since that date, the wireless has become a common means of communication. Stations have been erected in many parts of the world, some having a radius of many thousand miles.

Air Travel

The chief divisions of this industry are the transportation of mail, express, and passenger. These services were so little developed in 1915 as to be scarcely a matter of record. In fact, at this time, the airplane was still in its early experimental stages. War needs were one of the early factors leading to development; but even then the commercial possibilities of air transport were foreseen. Hence, constant studies were made of the elements which would put the business on a paying basis, such as the mapping of airways, the study of atmospheric conditions, and improvements in the construction of motors and planes.

The amount of mail transported by this method is a fairly good index of the growth of this form of transportation. In the United States this expanded from 18,000 pounds in 1915 to more than 8,000,000 pounds in 1931, and express freight amounted to nearly 3,000,000 pounds. More than 400,000 passengers were carried during this year.

Most of the larger countries have also engaged in the development of air service. In the United Kingdom, in 1930, the amount of goods and mail carried was 1,899,000 pounds, and the number of passengers, 25,094. In Germany the same years 5,857,000 pounds of goods and mail were carried, and 93,670 passengers. In France the mail and express was 4,100,000 pounds and the passengers 28,930.

The Mails

While mail service of some description dates back many centuries, this enterprise has been compelled to adapt itself to modern conditions.

With the coming of the industrial era, the great mass of materials handled by post office departments is made up largely of business mail which must be delivered regularly and promptly. This service is not so much a matter of inventions and discoveries taking place within the organization, but of making use of new methods of conveyance as they have demonstrated their usefulness. Hence, each in its day, the post rider, the stage coach, canal boat, steamboat, the railroad, and finally, the airplane, have come into vogue for mail deliveries.

For years, in the United States, it was the practice of Congress to designate the routes over which the mail should be carried and to make contracts with the carriers. One of these documents in the late forties called for delivery by "horse or muleback, or on the backs of men, in whole or in part, or in wagons, carriages, and sleighs, in whole or in part." One eager contractor on the route from Independence, Missouri, to Santa Fé agreed to carry mail in a "six-mule coach with iron axles and elliptical springs once every week." On July 7, 1838, Congress declared every railroad a mail route, but until such lines were built in every part of the country, the Post Office Department was compelled to rely on any kind of conveyance.

The significance of the new means of conveyance was not only in the promptness and regularity of the service, but in the reduction of the cost and consequently in the lowering of rates. Thereby, a great stimulus was given to the use of the mails. Until 1816, when the postal charge was reduced, the rate for forty miles and under had been eight

cents; under ninety miles, ten cents; under 150 miles, 12½ cents, and so on. Although a reduction was made in 1816, the charge was still so high that letters were often sent by express in preference to mail. For ten years prior to 1845, a reduction of rates had been agitated, and in that year five cents for a letter not exceeding one-half ounce became the charge for 300 miles, and beyond that distance ten cents. The charges increased with the weight of the letter. Since that time, the tendency of the rates have been downward. The Act of March 3, 1883, authorized the reduction of postage on all first-class mail to two cents an ounce. As an aid in reducing the deficit of the Post Office Department, Congress, in 1932, changed the letter rate for out-of-town mail to three cents, leaving the local rate at two cents. The great bulk of the mail is composed of business material which is handled in enormous volumes. Cheap postage has, therefore, been an indispensable aid in industrial growth.

In its essential outlines, the history of the United States mail service has been repeated in all countries. All governments, for centuries, have claimed a monopoly of this service. This principle was firmly established before the United States came into existence. Thus the provision in the Constitution giving Congress authority to "establish Post Offices and Post Roads" was only a recognition of what had already become the practice.

In practically all nations, the post office has become one of the largest enterprises of the country. In our own case, in 1930, the gross revenue of the Department exceeded \$705,000,000. In this year, the Department handled over 26,000,000,000 pieces of mail as compared with about 80,000,000,000 for the whole world. This was approximately 33 per cent of the world total. The relative percentages are shown in the table below.

APPROXIMATE PERCENTAGE OF TOTAL WORLD MAIL CARRIED BY GIVEN COUNTRIES (1930) ⁴

The United States	33 per cent	France	8 per cent
Germany	12 "	Japan	6 "
United Kingdom	8 "	Italy	3 "

Roads

Improvements in road-building machinery, and the great reduction in the cost of materials have revived an interest in roads as a means

⁴ *Commerce Yearbook*, 1932, Vol. II, p. 715.

of transportation. The coming of the automobile, and in some countries, the demand for improved outlets for freight among regions which were not adequately served by railroads, have added momentum to road-building. Practically all the richer countries have an extensive mileage of macadamized roads, to say nothing of an even more extensive mileage of improved earth roads. Of the first type, in 1930, there were over 664,000 miles of which 99,400 were in the United States.⁵ How inadequately the greater part of the world is served by road transportation is shown by the fact that all South America contains less than 300,000 miles of road of any type, Africa less than 150,000 miles, and Asia, excluding Japan and India, less than 120,000 miles. This also suggests the state of the domestic markets, which in regions without transportation are small local affairs.

Road-building, particularly in the United States, has created troublesome problems for the railroads. The new highways have come to be avenues over which vast amounts of freight are carried to market, to say nothing of the enormous passenger travel which they accommodate. In the neighborhood of the large cities, a great quantity of perishables, milk and vegetables, are brought to market over such routes; in some parts of the country, the freight business includes general merchandise. Sometimes the business is handled by private truck companies, and sometimes by the railroads as supplementary business. In any case, these highways have become the competitors of railroads, both with respect to passenger and freight business. Some of these problems were discussed by the Interstate Commerce Commission in its report of 1930: "If railway finances," said the report, "were suffering only from the fact that a recession in business is being experienced as in other industries of this country and of the world, it might be sufficient to point out that in judging of railway income one should in fairness consider the good and bad years together. But a different and more threatening financial difficulty confronts the railways."⁶

The Commission indicated that between 1920 and 1929 there had been a falling-off of \$414,000,000 in passenger revenue, and that while the income from freight has increased by about \$498,000,000 in the same period, the outlook was not promising.

⁵ A number of the smaller countries not reported.

⁶ Lippincott, *Economic Development of the United States*, 3rd ed., p. 530.

Automobiles and Pipe-lines

For some of these changes the railroads must thank the automobile, including trucks and motor busses. But all the troubles cannot be laid at this door. The new methods of handling crude petroleum, and in later years, gasoline have been responsible for great traffic losses. The pipe-line system was developed originally in the decade from 1860 to 1870 to transport petroleum from western Pennsylvania and Ohio to the seaboard. But notably since 1900, lines have been extended long distances from the newer producing areas in Kansas, Oklahoma, Texas, and California to refineries or, in the case of gasoline, to the large consuming markets. From 1920 to 1928, the increase in mileage of companies that reported to the Interstate Commerce Commission was from 48,000 to 81,000. A vast tonnage of material which, under other circumstances, might be handled by railroads now passes over these systems.

With respect to passenger business—the automobile has no doubt stimulated a great deal of new traveling. But, at the same time, it has diverted many passengers to the new modes of conveyance; this is true for necessary travel, which once used the railroads.

These are problems which are peculiar to the United States because of the highly developed state of motor travel and of good roads. Of the 35,000,000 automobiles of all descriptions in the world in 1932, upwards of 26,000,000 were in the United States; it was inevitable that, with the coming of this new form of transportation, the effects would reach the railroads in one way or another.

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CHAPTER XXIX

REDUCTION OF RISKS

Every cargo that goes to sea carries a risk. Modern life creates not only greater, but more diversified, hazards than life in a simple economy. As a result, many kinds of organizations have sprung up to provide protection. These include not only life, fire, fidelity, and accident, but liability, credit, industrial insurance of several types, and such minor kinds as burglary, plate glass, loss of profits by fire, protection against loss because of riot and civil commotion, not to mention them all. The appearance of each new hazard is the signal for the development of an organization to cover the risk, as with the coming of the automobile, and the later appearance of aviation. Since the close of the war, in order to foster a much needed expansion of foreign business, some nations have undertaken to guarantee a portion of credit losses due to risks which exporters might undertake in selling in uncertain markets. Nor is this all. Business men try to reduce their risk through such activities as hedging on commodity exchanges, and in some classes of speculation; the same purpose is involved in seeking information from credit-rating companies, and from organized news services. To the extent that advertising gives a measure of control over sales, it may be regarded as a species of insurance. Some have urged that even business combination eliminates various risks of destructive competition.

Marine Insurance

The type of risk which is of vital concern to international traders relates to vessels and freight on the seas. The task of insuring some thirty to forty billion dollars worth of cargoes, in normal times, is the work of marine insurance companies. This type of risk-coverage is not particularly a feature of recent economic growth, because protection in some form was undertaken by traders in the Hanseatic League towns. And Italian merchants, perhaps at an earlier date, understood the value of insurance, possibly on a mutual basis. But if the origin of marine insurance is not of recent date, at least the types of organiza-

tion which now dominate the field, and the enormous volume of business, give a unique character to this age.

Although marine insurance is an enterprise in a number of countries, London is the world center of this international business. For one thing, an organization built up as a result of several centuries of experience gives dealers an unusual advantage; but, in addition, the wide penetration of British commerce, with banking and other connections in every corner of the earth to facilitate the movements of trade, together with an enormous volume of tonnage and freight which float under this flag, contribute to the favored position of the home companies.

Lloyds

This organization has undergone many changes since its origin in the latter part of the seventeenth century. At that time it was merely a gathering of merchants for business or gossip, possibly more largely the latter. They met in the coffee house of Edward Lloyd in Tower Street, London. Lloyd guessed the needs of the men who assembled in his establishment and, shortly before 1700, began the publication of *Lloyd's News*, devoted mainly to commercial and shipping matter. Although short-lived, this paper was the forerunner of *Lloyd's List* which, among other things, supplied useful shipping information.

In the course of time, this organization developed into an association of merchants, ship-owners, underwriters, and insurance brokers. An important event in its history was an act of Parliament in 1871 which granted to Lloyds all the rights and privileges of a corporation. The act contemplated for the organization three main purposes: first, the carrying out of the business of marine insurance; second, the protection of the interests of the members of the association; and third, the collection and dissemination of information with respect to shipping.

This description should not convey the idea that Lloyds is a "great insurance company with large resources, with directors responsible to a body of stockholders, registered under the company laws with limited liability, and doing business under the regular insurance laws of Great Britain." On the contrary, it more nearly resembles a stock exchange than a company. In 1928, the membership consisted of 1,248 underwriters, ninety-five "non-underwriting members," 354 annual subscribers, and eighty-nine associates. The organization requires of its members annual audits, deposits, guarantees, and premium trust funds.

Each underwriter does business "each for himself and no one for another." Moreover, "each underwriter or agent for an underwriter undertakes liabilities on his own or his principal's behalf and carries unlimited liability; each meets his own liabilities out of his premiums; and each deposits securities with the corporation as a sign of good faith, much as an insurance company is required to make deposits with the Government. In fact, Lloyds is like an association of one-man insurance companies, each one subject to strict regulations as to his accounts and as to the proportion of his assets to his liabilities. The Corporation of Lloyds has a supervisory rôle, similar to that of the State, enforcing regulations affecting the business, carried on in its name."¹ Marine insurance is a business in a number of the larger countries, but it has not reached the proportions, nor the penetrating organization, of that of the United Kingdom.

It is obvious that this type of business relieves merchants and ship-owners of a risk which is incident to trading across the seas. It has become a highly specialized function of international trade, and it renders a valuable service not only by reducing risk-taking to a science, and by making it to all intents and purposes a coöperative affair, but by enabling merchants to concentrate on their particular function of buying and selling. No one can estimate how much this has contributed to international trading, but it is a safe guess that it is responsible for the movement of large quantities of trade which, without such agencies, could not bear the risk. Moreover, by the pooling of the burden through insurance it has greatly reduced the costs to shippers.

Credit Insurance

Under this caption we refer not to local organizations which sometimes undertake to insure credit risks of domestic merchants, but to insurance on foreign sales. The appearance of this type of protection is a matter of very recent years, and more particularly of the troublesome times since the close of the late war. It is based upon the desire of several governments to expand foreign sales, and thereby not only give some relief to domestic unemployment, but to remove some of the surplus which accumulates because of the decline of home buying power. The creation of the Export-Import bank in 1934 gives the United States its first experience in an organization which has credit for international dealings as its main purpose; Germany has used ex-

¹ Hugh Butler, "The United Kingdom," *Trade Promotion Series No. 94* (U. S. Department of Commerce), p. 714.

port credit insurance as a means of promoting trade with Russia; and in one form or another, the idea has been employed in the United Kingdom since 1919.

When the scheme was first undertaken in that year, the claim was made that without some form of credit and insurance, backed by the Government, it would be impossible for manufacturers to carry on business with certain countries. As is usually the case, a plan introduced in an emergency ultimately becomes a fixture in the economic system. So it has been with this scheme. Begun as a measure to assist trade with countries which were financially embarrassed, it was extended to empire countries, and then, where necessary, to world trade. The plan has since been continued as a partial remedy for unemployment.

It is possible that export credit insurance may become a new feature of international trading, ranking with bounties, tariffs, regulation of exchanges, and manipulations of the money units, increasing thereby the severity of competition in foreign markets. No doubt, something can be said in favor of such a policy, such as the contention that export credit insurance "provided government backing by means of which bills can be more readily discounted or credit secured." Many merchants of doubtful risk may eventually pay their bills, and the process of insurance spreads the risks over many dealers; but, on the other hand, it does not improve the merchant's basis for credit, a condition with which the individual trader is primarily concerned.

Life Insurance

This form of insurance prevails largely within national borders, but it is a matter in which the people of many countries are involved, and the business has expanded to enormous proportions.

An outstanding feature of modern insurance companies of all types is their attempt to limit their risks by a statistical study of the chances they take. With respect to life insurance, the use of mortality tables supplies the organizations with reasonable accurate information concerning persons in given age groups who die in given years. By this method the calculation of risks, and the determination of premiums, has become something of a science.

The idea of a workable method of insurance developed from experience. In its earliest form, in the beginning of the eighteenth century, life insurance was an arrangement to collect annually a fixed contribution from members of an organization, and the proceeds were distributed among the families of those who had died during the year.

These early organizations labored under great handicaps, including inadequate data upon which to estimate risks, and the inability to interest enough persons to supply adequate capital. Modern insurance companies have found ways of surmounting such difficulties.

In America, the forerunner of life insurance organizations was a society formed in Philadelphia in 1759 for the benefit of Presbyterian ministers and their widows; but it was not until about 1796, when the Insurance Company of North America was organized, that an attempt was made to carry on a general business. The early companies combined fire and marine, or banking and trust, as well as annuities, with life insurance. The modern company dates from about 1843, with the formation of the Mutual Life Insurance Company of New York.

Although this form of coverage prevails in many countries, the amount in force in the United States in 1930 was about 70 per cent of the total for the world. Possibly one reason for the preëminence of this country is the selling power put behind the organizations. The disposition of people in some countries is opposed to personal canvassing in the sale of commodities or services, and whether one buys or not depends on individual initiative and judgment. This seems to be the attitude in Great Britain. But another factor of great importance is the capacity of a people for saving, and this is largely a matter of surplus above necessary expenditures for food, clothing, and shelter. There seems to be some connection between the amount of national wealth and the volume of life insurance business. Where industry is on an inefficient basis, where wages and incomes are low, and where expenses for bare necessities absorb about all the people can earn, there is little or no surplus, and nothing to invest in future protection. Moreover, in nations where agriculture is the main occupation, there is a greater assurance for property and income to protect heirs than in nations where people are largely congregated into urban areas, and where there is nothing to leave except savings expressed in some form. It might be added in this connection that in a few countries life insurance is a matter of state activity, but under state management and control, people, as a rule, do not come in voluntarily to buy policies.

The status of life insurance in the countries in the world is shown in the table on page 476.

Insurance companies of all descriptions have not only become great business enterprises, but tremendous factors making for industrial growth. A service of great value is the stimulus they give to thrift. Moreover, the great sums collected annually in the form of premiums

LIFE INSURANCE: AMOUNT IN FORCE IN COMPANIES, INCLUDING DOMESTIC
AND FOREIGN BUSINESS; 1925 AND 1929
(MILLIONS OF DOLLARS) ²

	1925	1929
The United States	\$ 71,690	\$103,146
The United Kingdom	10,243	12,544
Canada	3,722	6,713
Japan	2,345	3,973
Australia	1,843	2,343
Germany	1,260	4,486
Sweden	1,044	1,260
Netherlands	818	1,147
France	666	1,401
Other countries	7,369	9,987
Total	\$101,000	\$147,000

form a large part of the funds which contribute both directly and indirectly to the industrial upbuilding of a country.

Fire Insurance

Modern society has developed a number of methods to diminish fire hazards, such as types of building construction, fire-fighting apparatus, and building inspection, but these are only ways of reducing the likelihood of loss. In last resort, the best protection is insurance. Here, also, changes in the way of living have been factors leading to extensive development of this method of protection. This is notably the case with the congregation of people in urban areas where risks are increased.

Fire losses vary from year to year, but in spite of all precautions, the annual toll seems to be increasing. In the United States, it amounted to only \$75,000,000 in 1875; it was \$160,000,000 in 1900, and as an annual average for the ten years ending 1931, it was about \$530,000,000.

The beginning of modern fire insurance seems to have taken the form of underwriting by individuals or clubs. In London, in 1681, a regular office was opened to conduct a fire insurance business. In America, the first enterprise of this kind was the Sun Company, an English organization, which had an office in Boston about 1728. Other companies appeared in time, but the business was small until the settled times following the formation of the Constitution.

² *Commerce Yearbook*, 1932, Vol. II, p. 735.

The work of distributing fire risks might be undertaken by governments and losses assessed against the community in the form of higher taxes. This has been tried in some countries, but the socialization of this type of insurance encounters the objection that it makes the community pay for a risk which individuals should take for themselves.

During the last seventy years, other forms of protection have come into existence. Insurance is also a feature of many fraternal orders; and out-of-work, sickness, and death benefits are paid by many labor organizations. Social insurance, including unemployment, accident, and old age, has been a practice in some European countries for a number of years, and more recently among several states in the United States, and still more recently by the Federal government itself. There is, of course, great diversity in both the composition and the operation of the plans. As a rule, the State is involved in one way or another, sometimes making a part of the contribution, sometimes undertaking to collect and administer the funds, sometimes merely prescribing the ways in which such insurance shall be managed. Each country adopts the system which appears to meet its needs. At least one underlying theory in all such plans is that risk is an incident to living in a complex society, that this form of social organization has created the risks, and that it is the duty of society which creates the risks to protect the victims.

Insurance in Buying and Selling

Complexity has also crept into many modern business dealings. In the larger countries, with millions of buyers and sellers, it is no longer possible to make immediate contact between those who wish to buy and sell. Organized markets are necessary. But these markets are more or less anonymous. Commodities are the objects of trade, but producers may be scattered in innumerable areas, not knowing each other, much less having an acquaintance with the persons who ultimately consume their goods.

The process of collecting goods from producers, and distribution to final buyers, depends largely on the stage of economic organization existing within a country. In vast portions of the world the perambulating buyer is the collecting agent, and he undertakes to find buyers in large markets, and these, in turn, pass goods through the channels of trade. Under such conditions the price-making process is a kind of dicker between original seller and buyer, and this may be the case with other dealers along the line. From this simple stage, the organization

grows in complexity with the development of economic life. For a vast variety of commodities the store becomes the market place—the location where goods are assembled from many producers for sale to ultimate consumers.

There have appeared in practically all countries, which are large producers and consumers of certain types of raw materials, market places where such goods may be bought and sold. These may be boards of trade, produce exchanges, auction markets, or something even more highly specialized. Such organizations are developed for the purpose of giving traders a convenient place in which to buy and sell. Members determine the rules and all who trade there must abide by regulations. But incidentally, such organizations yield a kind of insurance as a by-product. Under such auspices prices are determined, not by the chance opinion of individual buyers and sellers but as the result of the collective opinion of dealers. Thus, prices reflect the general economic conditions with respect to the commodities. In this manner the seller is assured a free market where the price is established with a minimum of guess work. In all such markets there has developed an information service which enables buyers and sellers to reduce considerably the hazards of trade.

Produce exchanges are relatively new institutions. In fact, their effective functioning depends upon the telegraphic dispatch of news and cheap transfer of commodities from one locality to another. Thus their growth has been linked with the inventions which made possible railroads, telephones, and telegraph.

In the United States, before 1860, staple products were usually sold by farmers to city merchants or their factors, or to commission men, and these undertook to find the market. Means for storage were limited. Facilities did not exist for learning promptly prices and selling conditions in distant areas. Within six months, the price of a staple like wheat fluctuated over a wide range, and prices on the same day in distant markets were often far apart. Distant buyers and sellers found great difficulty in communicating with each other. There were no market places to facilitate the sale of the surplus of one region in another, nor to supply information to aid traders in making bids and offers.

In the United States, organized produce exchanges date from the decade of 1840 to 1850. The Chicago Board of Trade came into existence about 1848 and was incorporated in 1859. The New York Produce Exchange was formed about 1850, and was incorporated in 1862. Other trading organizations of similar scope appeared subsequent to that date.

Auction markets are somewhat more limited in activity, but their purpose is similar to that of the great exchanges, namely, to provide a known place where buyers and sellers may meet and exchange their wares. Whatever the shortcomings, these organizations provide a certainty and regularity of dealings which did not exist in former days when the individual seller met individual buyers to decide prices and terms of sale. International trading on a large scale in wheat, cotton, wool, copper, lead, zinc, gold, among others, has been rendered more stable and orderly because of the existence of exchanges, and the international price situation, which is of prime interest to buyers and sellers, is adjusted with greater ease and definiteness through this method of trading. In fact, in spite of tariffs and manipulation of moneys, prices are determined in international markets under the influence of world conditions. The exchange is the place where such conditions are finally registered in terms of prices. Dealers are thus relieved of the risk of arbitrary conditions in the market, and of uninformed guesses about market factors.

Within some of these markets there has developed a specialized kind of insurance of which hedging is an example. A manufacturer expects to make profits from fabricating raw materials and selling finished products. He is not interested in the ups and downs in prices of raw stuffs. In fact, these interfere with his operations and increase his risks. The process of hedging is a way of shifting such hazards to groups of speculators whose function is to forecast market conditions and to diffuse risks.

Security Markets

Organizations of this type exist in all the larger countries, and frequently in a number of the cities within the nations. Dealing in shares is not a new enterprise even across national boundaries. Victims of the South Sea bubble were scattered in a number of nations. But, until the middle of the nineteenth century, such investments, or speculations, were matters which concerned mainly occasional investors. In this new era that made an appearance subsequent to that date, international dealings in securities became a regular business. It now comprehends not only government issues of many kinds, but stocks and bonds of manufacturing and commercial companies. A security exchange has thus become an important agency not only for the effecting of transactions but for registering values.

The history of such organizations in industrialized countries is a

counterpart of that of the United States, but we might take this country as an example.

It may be said with a large measure of truth that the growth of the New York Stock Exchange is an epitome of the industrial development of the country. Its main stimulus to expansion came from all the great forces which were making for the creation and investment of capital and for the industrial growth of the country. Some factors which contributed to the development of exchange transactions were the increasing number of securities resulting from the financing of canals from 1820 to 1837, of railroads after 1827, and of some new enterprises which sprang up shortly before 1860. The purchase and sale of government bonds during the Civil War added greatly to the volume of business. Then came the securities of the Pacific and other railroads, and finally, the great era of corporate financing after 1880. Some idea of the effect of these changes on the Stock Exchange may be obtained from a statement of the value of listed securities. The amount in 1868 was estimated at \$3,000,000,000; for 1911 at \$24,374,000,000. And on August 1, 1931, the market value of stocks and bonds listed on the Exchange was about \$92,000,000,000. In order to write the history of exchanges in other countries, it would only be necessary to insert the names of different classes of enterprises, and even then, there would be great similarity among the types of securities listed on the world exchanges.

When about a century and a half ago, a few buyers and sellers gathered near a buttonwood tree which stood in front of No. 68 Wall Street to deal in government bonds they did not realize that they were inaugurating a practice which would develop into one of the largest organized markets in the world. In their simple way they were moved by the desire to establish a convenient and a known place where those who had something to sell could meet buyers. They were in quest of a market place. Presumably, also, like the dealers at Lloyd's, they were interested in the gossip concerning their securities, for upon this they based their estimate of future values.

Stock markets, like grain and produce exchanges, have been notably affected by the growth of means of communication. Wherever possible, electric inventions have been adapted to the rapid transfer of information so that to-day, changes in values are recorded in different parts of the country, and for some securities, in different parts of the world, shortly after the transaction has been completed. In this manner, values are established by the conjunction of many judgments, and buy-

ers and sellers escape the risk of arbitrary bids and offers. Of course, there are still great risks in dealing in securities, but these are primarily in fundamental conditions which dealers try to forecast. Because of world-wide commerce, and a world-wide diffusion of investments, dealings on exchanges are sensitive to occurrences anywhere on the globe which may affect values.

Credit Rating

During the early history of the mercantile agencies debtors, or buyers, challenged the right of sellers to seek information concerning their credit standing. But this service was justified on the basis that "the man who seeks to buy goods on credit challenges investigation, that information of this kind must be had or the credit system must be greatly curtailed or abandoned, and that if the creditor may justly make an investigation for himself, he may employ others to do it for him." The mercantile agency has more than justified itself throughout its ninety years or more of existence.

In fact, the extension of credit, whether by merchants or banks, involves a great risk. The buying merchant may not be a good business man; his accounts may be in bad shape; he may even be dishonest; his judgment about his own business methods may not be sound. To extend credit under such conditions is to pave the way for all manner of losses. Now-a-days, the creditor seeks to assure himself of the soundness of the buyer's, or borrower's, condition, by collecting essential data bearing on his case.

This became all the more essential with the widening of the markets, because merchants lost the intimate contact with customers, and trading became more and more an anonymous affair in which neither party knew much about the conditions of the other. In short, the development of markets enhanced the hazards of trade.

In the United States, the rise of mercantile agencies was an outcome of the panic of 1837. At that time, the whole system of internal commerce was disrupted, and in the midst of this confusion, Eastern merchants lost confidence in their customers, not knowing whom to trust, because they did not know who had been seriously crippled by the hard times. Credit information was not wanting before this time, but it had been obtained by the expensive process of each merchant sending out his own men to collect bills and to learn the credit standing of customers. To-day, the credit department has become an established division of every kind of business. It not only gathers credit

data concerning customers, but keeps abreast of general business conditions, which in one way or another affect the credit of customers.

Credit information works to reduce business risks in less obvious ways than those just discussed. The "challenge of investigation" inspires most business men with a more cautious attitude than would prevail if they went their own way without having to reveal their conditions. This makes for sounder business relations; men who borrow from banks or buy goods on credit, know that they must keep their houses in order. In this manner, credit procedure improves the tone of business and tends to reduce the hazards.

The practice of gathering credit information varies from country to country, but its purpose is always the same; namely, the reduction of risks. In many parts of the world, banks are the only sources of data concerning customers' standing. This is obtained in the ordinary processes of business through a knowledge of customers' balances, defaults on payment, the merchant's general reputation in the community, and other facts which a bank gathers for private use. From such sources come a vast amount of general news bearing on business conditions. Where established agencies for ascertaining credit rating do not exist, business labors under serious handicaps.

News Service

For many centuries, business men have tried to conduct affairs on the basis of information, but in most cases, this was only the result of guess-work or opinion, and consequently, involved a great element of uncertainty. A trading company, shipping goods to its factories, had little or no knowledge of actual conditions in markets in which it expected to sell; at a later date, merchant shippers, who operated a kind of floating store, felt their way through the channels of trade, guessing from past experience what commodities would be required at places along the route.

The significance of methods which have come into existence during the past seventy years is that information-gathering has been reduced to a system, and that data thus assembled are used as a basis of forecasts. Nor is this all. The statistician applies scientific methods both in the collection and interpretation of facts. He tests his information and reduces his facts to graphs and charts which reveal at a glance the substance of great volumes of factual material. He studies business trends and makes forecasts accordingly. The outcome is to remove

some of the guess-work from business undertakings, and to replace uncertainties by approximate certainties.

Census Reports

With a similar intent, practically all countries record data concerning imports and exports through their customs offices. The larger nations, at least, publish information concerning local industries and commerce. The industrial census is of recent date. Most nations that follow this practice take an enumeration only at irregular intervals; but in the United States it has become a matter of routine—a comprehensive census once every ten years, and minor enumerations as a continuous process.

No one questions the value of this data. It is used in making market surveys, in establishing sales quotas, in ascertaining prospective purchasing power in the given areas and in ordering of sales policies, to name only a few uses. This information removes some of the guess-work from ordinary enterprises. One purpose to which this data is put, and incidentally it is of growing importance, is to ascertain social conditions; in this respect, census returns frequently supply the arguments for certain types of social reform.

In the United States, our Constitution provided for the taking of a census in order to determine the apportionment of representatives in Congress, but the work has expanded far beyond the conception of the earliest census-takers. The first census, in 1790, related solely to population. At the third census in 1810, an attempt was made for the first time to collect industrial statistics; the returns covered kinds, qualities, and values of manufactured goods for each state and territory, together with fragmentary statements relating to mines and quarries. The census of 1820 proceeded with greater detail, showing for the first time the numbers engaged in agriculture, commerce and manufactures. The census of 1850, taken under authority of a law drawn with much more care than any former Census Act, constituted the beginning of modern census-taking. Successive reports have greatly elaborated schedules and details.

One important feature of the census of 1929 was the collection of data concerning domestic commerce. Census-taking is a much more thorough and comprehensive undertaking in the United States than in other nations. Possibly it might be said that business men in this country are more devoted to the conduct of business on a factual basis than their confrères elsewhere.

Commercial Research

In Chapter XVIII we referred to the development of industrial research. Selling aspects of a business are subjected to the same scrutiny as production. Information may be of a general character, such as relates to broad conditions in a trade, or to economic situations in sales areas, or in world markets. Practically all great nations maintain a division of government which is charged with the duty of searching for sales opportunities, making studies of consumers' wants and peculiarities of markets. In some instances the purpose is to promote sales and to enlarge the export commerce. But, by revealing the character of the markets, this data removes some of the guess-work from sales promotion.

With respect to domestic markets, merchants and manufacturers in the United States have probably developed the idea of research to a greater extent than have those in any other country. Such work is one of the purposes of trade associations. Moreover, large corporations undertake commercial research on their own account, and for their own private benefit.

All this may or may not increase the security of business operations. In some respects it works in the opposite direction, because it intensifies competition, which is always a disturbing element. But with some industries, it broadens the basis for sales, and consequently of income, and in this manner lifts the enterprises somewhat above the ordinary hazards of dull times.

Business Combinations

A similar conclusion applies to business combinations, whether in the United States or abroad. One of the avowed purposes of such organizations is the elimination of destructive competition. Since business rivalry always increases risks, to the extent that the combination succeeds in doing away with such practices, it restores a measure of stability to enterprises.

Even in the case of the so-called integration—combinations of enterprises in similar lines—the effect is to add a measure of security. But in the newer combination movement, which came into larger prominence since 1920, the effort seems to have been not only to diversify the activities under one management but to secure a more diversified source of income. If one group falls short, due to seasonal or other in-

fluences, the others are expected to take up the slack. Of course, this is not a panacea for irregular income in a protracted depression. All signs fail in dry weather. But it is expected that such combination will act as a corrective in the minor movements in the business cycle.

Cartels in some European countries plan to go behind the price-making factors and to operate on underlying conditions which eventually determine prices. Thus they sometimes limit output among members and allot sales, or divide sales territories among erstwhile competitors, or employ other devices to divide a limited demand among a considerable number of producers. In this manner each member will receive some orders, whereas without such arrangements competition might drive down prices to a point where all would be operating at a loss. Possibly there is more security in such control than under unbridled competition.

Sometimes governments take a hand in such arrangements, as with the valorization of coffee in Brazil, the control of rubber under the Stevenson Act in Great Britain,³ of wheat and cotton under the late Farm Board in the United States, and more recently of the extensive system of control under the Agricultural Act of 1933. In any event, the purpose is to regulate some element in industry so that producers can proceed with greater certainty. Of somewhat the same nature, although on a nation-wide scale, is the regulation of American industry under the National Industrial Recovery Act of 1933.

Certain it is that living in a complex society has greatly increased certain types of hazards not only to individuals, but to business enterprises. But on the other hand, it has reduced others. With the building of railroads and the development of storage, people are much less victims of the whims of nature than in former times when famines or floods brought death to many thousands. Even in normal times it is possible to equalize conditions of supply practically over the whole earth. Modern transportation makes possible the transportation of the surplus of one region to others which might be suffering from shortage. Famines which once ravaged India, were in part the result of lack of transportation. It often happens to-day that flood, fire, or earthquake may deprive people in stricken areas of necessary supplies; but the shortage may now be made up quickly by some means of transportation.

³ Lippincott, *Economic Resources and Industries of the World*, pp. 49, 424.

Storage

If for no other reason, the seasonal nature of production has always made some form of storage necessary, except perhaps in tropical areas where tribes live close to nature, and where native abundance continues the year round. In densely populated countries, where people are living under a system of divided labor, man-made methods of storage have been provided.

This is true also of perishables. Canning and preserving of fruits and vegetables are to all intents and purposes methods of storage. Meats and fish were once preserved by salting or smoking, or by being kept in cold cellars, or on ice. A new era began about 1860 with the invention of the ammonia-absorption process. The first cold storage plant in the United States was said to have been built in 1865 for the purpose of preserving fish; but the ammonia process as now perfected did not come into general commercial use until about 1890.

This new method has revolutionized the trade in perishable commodities. In all large cities are storage warehouses wherein are deposited a number of kinds of goods. Further improvements applied to refrigeration of meat and fruits in transit, making long distance commerce possible. The refrigerator car was based on a patent issued to William Davis of Detroit in 1868. The following year the first cargo of fresh beef was shipped from Chicago to Boston. Subsequently, chilling and freezing were adapted to long distance transportation over the oceans—a condition which made possible the development not only of the meat trade of Argentina and Australia, but trade in butter, fresh eggs and fruits, among others. It is obvious that storage, combined with systems of preserving perishables, and long distance shipping, have greatly reduced the hazards of living. They have done much more for they have increased conveniences and comforts.

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CHAPTER XXX

FOREIGN INVESTMENTS

The effective handling of commerce, whether within national borders or across the seas, requires much more than the establishment of routes of travel, of means of communication, and of methods of diminishing risks. The commercial organization could not function without the facilities that are offered by banks and investors. In all these cases, these agents of trade render an intangible service but they are so necessary for the orderly flow of commerce that trade in physical goods would shrink to small proportions without them. Both banking and international investment have been activities for centuries, but the character of both has changed in modern times, and the volume has been greatly expanded.

Banking

Here and there, in former chapters, we have made reference to banking conditions. Of necessity, these vary from country to country. Financial institutions have been developed from experience and their present form expresses not only the lessons which have been taught by practice, but the ideas of lawmakers and students of theory. The Bank of England, founded in 1694, which is one of the oldest institutions, has continued to the present day. Although over two centuries old, its functions have been continually expanded to meet changing conditions. It is not the only bank in England, but its situation is unique in that country not only because it is a central bank, but because it occupies a dominant position in the British banking world.

France, also, has been the home of banking for centuries, but the Bank of France, also a central institution, came into existence in 1800 as a part of the reorganization schemes of Napoleon. Like the bank of England, it is a private institution, and it also occupies somewhat the same position in French financial arrangements as the institution across the channel. Banking in Germany, under the auspices of a great institution is of later origin. Prior to the formation of the Empire, each

state made its own banking arrangements, but shortly after the consolidation of the states, the Imperial Bank of Germany was formed by the enlargement of the scope of the Bank of Prussia. This occurred in 1873. Japan made its appearance in the world of commerce and finance at a later date, but this country also is in possession of a central bank, the Bank of Japan, modeled largely after the pre-war German Reichsbank. In this country also are banks which administer not only to short time commercial needs, but to long term or investment uses, to small enterprises, and to consumers. Deposits in commercial banks expanded nearly seven-fold from 1913 to 1929, and loans and discounts more than four-fold. In 1929 there were upwards of 880 commercial banks in Japan.

A feature of banking in many parts of the world is the existence of a central institution to which other banks look for various types of service, and whose policies exert a large influence over other domestic credit institutions. But with practically all countries, the supply of credit is the work of a considerable number of banks, some of which are more or less specialized in character, as for example, loans for investment purposes, for the small borrower, or for agricultural purposes. The systems of some countries permit the establishment of branches and agencies both within and outside the country.

Banking is now almost as widely diffused over the world as commerce. Necessity has imposed this condition on trade, for it is impossible to elevate commerce above a primitive stage without the use of the facilities which a bank provides. International commerce is concerned primarily with buying and selling bills of exchange, with discount of paper which arises in connection with import and export, and with provisions for an adequate supply of gold, or sometimes silver, to serve as a basis for bank credit. Machinery for these purposes has become highly developed and is widely diffused in all commercial areas.

The handling of investment banking is largely concentrated in the hands of a few great houses in the chief financial centers. Such institutions, also, are the result of a long process of development, which has been greatly accelerated in the years, notably since 1880, by the appearance of large-scale borrowing by many types of government, and by the development of corporate enterprise. In case of the latter, irrespective of the country of incorporation, the shares are sometimes sold far and wide, which means that international capital is employed to finance the enterprises.

The Effect of Foreign Investments on Trade

Foreign investments have been classified in a number of ways, but these are of little significance to students of commerce. The important fact is that when funds, or purchasing powers, are transferred from one country to another, they affect the commercial relations of nations. The most obvious case is the opening of mines and developing of plantations. Here the effect is to increase the materials for commerce, to introduce productive enterprises in regions which had none before, and to improve the productive capacity of the areas receiving investments. In less obvious ways, loans to governments also tend to stimulate trading. In many cases such funds are used either directly or indirectly for improvement in the facilities for commerce, and sometimes actually for productive work.

The records show that governments borrow for the building of roads and bridges, for railway construction, for erecting light and power plants where such enterprises are government owned and operated, or for guaranteeing loans where the work is done by private capitalists. Government loans are used also for the construction of sewage systems, waterworks, harbors and dock facilities; for the building of market places and the improvement of rivers. When a government is affected with the virus of improvement, funds might be spent for almost any purpose that seems wise to legislators. Such borrowing is sometimes on a large scale, to secure sufficient funds for such ventures as extensive railroad-building for example.

We may summarize the ways in which foreign lending promotes the growth of international commerce.

First, while loans are expressed in terms of money, in the last analysis, they are frequently transferred to borrowing countries in the form of commodities. An interesting illustration of this point is the huge European borrowing in the United States during the late war. The proceeds of the loans were spent mainly in this country for war supplies, which were exported to Europe. A similar condition exists with many peace-time loans. It is frequently understood that the borrowed funds will be spent for purchases in the lending country. So too, with the more direct investments of private companies, which often take the form of export of machinery and supplies. Thus, it is not far from the fact to say that foreign investments often emerge as exports of goods. In this manner, they promote foreign shipments.

Second, foreign investments are frequently employed for some pro-

ductive purpose. As such, they cause an increase in the output of factories, mines, plantations, and forests. The resources of the "borrowing country" are developed, and in the course of time, it has more commodities both for local consumption and for export. This means that the purchasing power of the borrower is increased. Much of the foreign commerce of Latin America is due to the creation of funds which foreigners have invested in mines, railroads, merchandising, and in farming. A similar condition prevails in all parts of the world where foreign capital has entered for developmental purposes. Even with the older countries, notably since the close of the war, American investments have enlarged the possibilities for manufacture and sale.

Third, in many cases, investments take the form of improved facilities for commerce, such as the building of railroads, and the improvement of ports and harbors. Since transportation is indispensable, such investments supply an absolute necessity. It might be said in passing that by far the greater part of railroad-building in the poorer countries has been financed by the capitalists of a few of the richer areas.

Fourth, eventually, the investment is expected to bring a return, which is paid to foreign stock or bond holders as dividends or interest. In time the principal itself may be repaid. Herein, the reverse process comes into operation. In the absence of sufficient invisible items with which to make payment, and newer countries rarely possess important amounts of such items, payment of interest and repayment of capital take the form of an export of commodities. To the extent that foreign investments open new resources and increase productive power, they supply the means of payment. Stated in other words, foreign investments increase both producing and consuming power; in this manner they lay the basis for an expansion of all forms of commerce.

Investment Is a Commercial Procedure

The invisible items of trade, of which investments are among the most important, are among the leading elements in the international balance sheet. These appear in the market as bills of exchange, or as claims for money, and a rather intricate banking machinery has been developed to effect settlement. During the last half-century, the conduct of this business has developed into one of the world's greatest enterprises. Dealing in foreign exchange has increased along with international commerce, because, in one way or another, claims for payment appear in the money markets.

With regard to investments, an extensive organization has been built

up gradually for two purposes; first to assemble funds from both large and small investors; and second, to transfer these funds to borrowers. The investment banker has become the middleman who performs both these functions. Naturally, his organization includes not only those who are associated with him in underwriting ventures, but other banks, brokerage houses, and dealers of all descriptions. The invisible ties of this organization are stretched to every great city of the world, and sometimes into thousands of villages and hamlets. This organization solves the problem of bringing together innumerable persons with a surplus to invest, however small, and those who wish to borrow. The development of this machinery has been contemporary with the appearance of intangible forms of property, as evidenced chiefly by stocks and bonds. Of relatively small significance at the beginning of the modern era, money markets have become the most active, and most widely distributed, of all the types of enterprise.

Why Invest Abroad?

The obvious answer to this question is, "In order to secure a profit." But this reply fails to give in detail what is in the mind of individuals and corporations when they turn their funds over to people outside their borders, nor does it convey the idea that there is a long time, as well as a short time, point of view. It ought to be added that in a few countries investment abroad is regarded as a stroke of farsighted statesmanship to encourage the nationals to save and to lend to outside enterprises, thereby increasing, perhaps into the distant future, the opportunities of the home country, not only to secure necessary raw materials, and the needed growth in commerce, but because of these things, a further expansion of home industries, with all the benefits which such growth is expected to confer.

One of the immediate results of such investments is to assure home industries a future supply of raw materials. This is particularly the case with vanishing resources. Some countries have little or no supplies. Others must look forward to the time in the not distant future when the better grades of domestic materials will have been depleted. It is urged that it is better to get control of outside resources now than to wait until other nations have staked their claims. This is the motive for the international struggles for petroleum, iron ore, manganese, and other products.

In addition, there are some immediate practical reasons for investment. One form that these take, particularly in American practice, is

to found branch factories abroad. The "dominating idea is the desire to overcome certain sales obstacles (tariffs, transportation, lack of service facilities, national sentiment, patent provisions) rather than to take advantage of opportunities to exploit natural resources."¹ When American manufacturers began to produce agricultural implements, shoe machinery, cash registers, telephones, automobiles, and electric refrigeration in Europe, their thought was that distant markets could not be sufficiently expanded by sales from the home country. If it were contended that there was a disadvantage in producing and selling under unfavorable conditions, the reply was "that the impetus of original invention, patent control, financial strength, or general industrial experience, was enough to overcome such obstacles."

One of the strongest sales obstacles was foreign tariffs, which often placed serious limitations on imports. Possibly, in some instances, one of the purposes of high tariffs was to encourage foreign investments because it was thought that this would enlarge the scope of domestic industries and bring various desirable results. This argument was used in the United States over a hundred years ago, and some modern countries seem to think that it has value. At any rate, many nations look with favor upon investment by foreigners, provided this does not develop into political or economic interference with home conditions, and tariffs are a feasible method of achieving this result.

Sometimes low labor costs, the prospect of developing large sales in other countries, and the effect of the "working clause" in the patent laws of certain countries, which makes local manufacturing or leasing of manufacturing rights the requirement for patent protection, are in the first instance the motivating forces in the establishment of factories abroad.

Sources of Investment Funds

While saving is not a new phenomenon, the accumulation of claims to money is an outstanding feature of the industrial era. In former times, the lack of convenient forms in which wealth could be stored imposed difficulties on saving. There was not a large supply of intangible kinds of wealth, such as stocks, bonds, and mortgages, which in later times became great instruments of investment. Many of the things which might have been produced in large quantities were perishable, and great risks surrounded most kinds of accumulation. Now and then a rich merchant invested some wealth in intangible forms,

¹ *Commerce Reports* (U. S. Department of Commerce), December 9, 1929.

as was the case of the Boston merchant, Peter Faneuil. At one time he owned stock in the Bank of England, in addition to certain bonds and annuities.²

But in most instances, a man's savings were in land, buildings, stock in trade, tools, jewelry and plate. The wealth of the great merchants was largely in ships and merchandise, which increased with the growing success of their ventures. In America, the southern planter had most of his wealth in land and slaves. Not infrequently, jewelry and plate served as a means of accumulating the family savings. Thus, said P. A. Bruce in his *Social Life of Virginia in the Seventeenth Century*, "Planters in the possession of large fortunes were constantly purchasing silver plate through their merchants in England; and this was done not only for the more striking display which the silver service would make, but also as a safe form of investment."³

Merchants, shopmen, small manufacturers and farmers followed much the same theory; namely, of putting their savings into such tangible forms as were not immediately perishable. People who accumulated wealth in hoards, as is done in some parts of India to-day, put their surplus into things which could be seen and handled. But much of this practice has been changed in this modern era of investment.

One great service which banks, whether investment or commercial, have learned to render is to convert the physical assets of society into liquid forms. Thereby, savings have become available for thousands of industrial uses. And what is of equal importance, they may be shifted easily from one industry to another as the investor sees an opportunity for profit.

Many enterprises of national importance, whether in the United States or abroad, could display a pretentious list of stock and bond holders scattered in a number of parts of the world. General Motors may serve as an example: In July, 1931, this company announced through an advertisement that "285,615 people now own General Motors." The stockholders were distributed throughout every State in the Union, in eight countries of South America, in twenty-five in Europe, in practically every Central American country, and in several of the divisions of the British Empire. Foreign holdings in American iron and steel, copper, chemical, utility companies and railroads are

² Lippincott, *Economic Development of the United States*, 3rd ed., p. 117.

³ Lippincott, *op. cit.*, p. 117.

widely distributed. And this is true for some of the great enterprises of England, Germany and France.

In last resort, individuals are the source of investment funds. Sometimes they buy stocks and bonds directly in companies which meet their favor; but less directly, their surplus funds find their way into investment channels through savings banks, investment trusts and life insurance companies, and other similar organizations.

The greatest reservoirs of surplus capital are the industrial nations, mainly the United States, the United Kingdom, France and Japan, and to a smaller extent Netherlands and Belgium. Before the war, Germany supplied large sums to the international investment market, but since that event, she has been more of a borrower than a lender.

The process of saving has been most rapid since the development of the new industrialism, beginning about 1880. Not only were home industries much more productive than in any former era, but the great nations entered a new period of foreign market expansion. Meanwhile, the active interest in colonial development called for larger investments and at the same time added a new impulse to commercial development.

Distribution of Foreign Investments

Investment beyond national borders has been going on for many years. Occasionally, in colonial times, rich merchants owned stock in the Bank of England. In the early years of the United States, English capital was invested in the First, and in the Second, United States Bank, and subsequently larger sums were placed in canals and early railroads. The stream of foreign capital, rather small at first, began to flow in larger volume towards 1860. With the coming of large business, after 1880, many millions of dollars from abroad sought profits in a considerable number of American enterprises. When the war came in 1914 it was estimated that over \$2,000,000,000 of British capital was invested in this country. This says nothing of smaller amounts from France, Belgium, and Germany.

In the earlier years of our development, foreign investment served its customary purpose of enabling business enterprise to build railroads, and to develop mines, ranches and plantations. In later years, this added capital was an important contribution in developing the large companies. At all times, the new funds gave momentum to industrial growth. It would have been impossible for this country to

expand as rapidly as it did without the financial aid from abroad, particularly to railroads, because transportation systems in the United States, as in every other region in the world, were the imperative need of the growing country.

Foreign investment, to which American capital now contributes largely, is serving the same purpose in other parts of the globe. But during the last fifty years the funds became not only much larger but much more widely distributed than in the earlier period.

The years since 1880 have been notable for the introduction of vast government undertakings. Sometimes such funds have been used for public improvements; sometimes for the construction, or extension, of public utilities. In any event, such works have required large expenditures, in many instances far beyond the ability of the home country to supply.

In addition, with the rise of large enterprises, the directors were actively concerned with control over certain foreign resources. The tariff policies of the countries sometimes gave added momentum to the flow of investment funds, for, if it were becoming more expensive to ship goods across tariff borders, a partial remedy was found in establishing factories in the protected countries. This sometimes conferred the added advantage of lower production and distribution costs.

Several pages would be required to enumerate the specific kinds of foreign enterprises which have received the benefits of such investments. A brief illustration will suffice. Since 1860, Americans have made more than 520 manufacturing investments in Canada. Over 500 of these were made in the years since 1900. These include chemicals, such as pharmaceutical preparations, dyes, paints, toilet articles; food-stuffs, including the manufacture of a number of cereal products and beverages; machinery, chiefly of the agricultural varieties; metal products, motor vehicles, and certain textiles.

Canada has been in about the same condition with respect to need for capital as was the United States in the earlier years of industrial progress. That industrially this country has most of the features of the United States, that its consuming habits are practically the same, and that close proximity to the United States has simplified the problems of supervision of investments, have been important factors drawing a large share of our surplus funds in that direction.

In regard to Europe, American industrial expansion started into this area over fifty years ago. Plants for "manufacturing metal products and patent medicines were among the first to enter the continent. These

commodities continued prominent in the subsequent movement, varying naturally in the exact articles concerned as the production of various specialties came into prominence. The first really sustained activity occurred in the machinery group around 1900. American agricultural and industrial machinery manufacturers have established factories in Europe off and on from that time to the present, an impressive expansion taking place from 1927 to 1929. The electrical and telephone equipment and supplies group entered Europe about 1902. Thereafter, for many years, no new development occurred for that group, although internal growth was substantial. After the World War, when the financial strength of the American corporations and the weakness of industrial organizations in Europe made tremendous additional investments possible, the expansion of the American electrical industry in Europe became especially notable."⁴

Until the war period, the chemical industry of the United States was partly German owned. But since 1920, American companies, through the development of branches and subsidiaries have penetrated into a number of European countries. The automobile companies, also, have greatly extended their activities on the Continent.

The form of organization "most frequently adopted by American corporations for their foreign operations is the subsidiary organized under the laws of the foreign country. This is especially true in Europe, Canada, and Australia, and to a lesser extent in Latin America also. The principal reasons for this are, first, that such incorporation gives a degree of local color to the organization that is effective in overcoming any antipathy to foreign goods and, second, that certain advantages in taxation and in the breadth of operations permitted by the law frequently result."⁵

Nearby countries have absorbed large quantities of American capital. In Cuba, investments have been made in the production of sugar and tobacco, in railroads, docks, warehouses, freight-handling facilities, in iron mines, merchandising, hotels, and amusement resorts, not to mention them all. In Mexico, American enterprise has entered such industries as mining and smelting, the production and refining of petroleum, ownership of plantations, merchandising, certain kinds of manufacture, and public utilities. In Argentina, meat-packing is one of the largest of American activities, but significant amounts of capital are in such industries as automobiles, stone, clay, glass, and chemicals.

⁴ *Trade Information Bulletin No. 731* (U. S. Department of Commerce), p. 39.

⁵ *Ibid.*, p. 31.

Africa, Asia, and Oceania have received much less attention from American investors than regions nearer home, but a few of the larger companies, including the petroleum organizations, have almost a world-wide interest at least in the marketing end of the business and, to some extent, in the ownership of productive resources. Both directly and indirectly, but more largely the latter, American capital has contributed to the development of the rich copper resources in Africa and is involved to a smaller extent in other mineral products.

In Asia, there are relatively large investments in Japanese electrical, chemical, textile, and automotive vehicle industries. There is some American ownership in rubber plantations in the Netherland East Indies, and in Chinese petroleum and public utilities. In British Malaya, our investments are of about the same type; in addition, some tin mines are being operated by American interests, along with the distribution of petroleum products. In India, one of the most important uses for American capital is in the manufacture of burlap in its various forms. In Iraq, the production of petroleum and dates, and in other parts of the Near East, the purchasing of licorice roots, mining, and petroleum distribution are the "major forms of American investment."⁶

It is clear from what we have said above that American investments are widely distributed over the world. The same could be said of British capital, and to a smaller extent, that of France, Belgium and Holland. Such investments represent an addition to the productive enterprises of the regions concerned, contributing commodities both for domestic and foreign consumption, and in various ways supplying diversity to their economic efforts.

With respect to Great Britain, foreign investment has long been an important activity. In fact, it is not only regarded as normal, but necessary. Thus it has been said that "one of the principal concerns of the national savings movement in England is that there shall be from year to year a tidy surplus of capital available for investment overseas."⁷ Only to a limited extent are the two uses of surplus savings, namely, at home and abroad, regarded as competitive, because it is assumed that "home needs would have first pull on the available supplies of capital."

Movement of funds from the country for productive work elsewhere

⁶ *Loc. cit.*, p. 27.

⁷ Hugh Butler, "The United Kingdom," *Trade Promotion Series No. 94* (U. S. Department of Commerce), p. 718.

is regarded as an essential for domestic welfare. Thus, "had it not been for the development of food and raw material production and of the means of transport in many parts of the world, Great Britain would have been quite unable to support her present population at anything like the existing standard of living. It is true that the advantage which thus results from the export of capital may to a considerable extent be temporary, since the industrial development of other countries may ultimately cause increased demand for their own home products in those countries. This fact, however, tends to emphasize the necessity for continued investment of British capital in new areas overseas in order to safeguard the position of this country in the future."⁸

Since the investigation of Sir Robert Giffin in 1878, various attempts have been made to calculate the amount of exported capital. In 1907, Sir George Paish put the sum at £2,694,000,000. Estimates about 1927 were about £4,000,000,000, which was thought to be in the neighborhood of the pre-war figure.

In the case of Britain, various parts of the empire absorb a large proportion of the loans. In fact, many regions have been developed by capital supplied by the home country. But there are also large amounts invested outside the empire in railroads, mining, plantations, shipping, manufacturing enterprises, banks and merchandising.

The Control of Raw Material

Notably since 1900, industrialists in some of the larger countries have been actively concerned with control over essential raw materials beyond their borders. At the high rate of production of recent years, the resources of even the most favored areas cannot continue to yield their product indefinitely. Already there are indications that the better portions have been exploited, and that henceforth it will be necessary to tap poorer grade materials.

A most impressive illustration of this point is found in certain resources of the United States. At one time, the iron ore bodies were thought to be inexhaustible. Certainly it is true that at the rate of development before 1880 the known supplies were adequate for the domestic industry for many years. But the enormous draft upon these resources, notably since 1900, has brought forward the specter of exhaustion.

The output of the American mines in 1929 was 73,000,000 tons, the

⁸ *Ibid.*, p. 719.

greater portion of which was obtained from the Lake Superior area, which contains the richest known deposits. But the significant feature is that since the beginning of mining in this district, about 1854, the reserves have been reduced to about one-half of what they were originally. According to present estimates, the remaining tonnage in Minnesota and Michigan is about 1,500,000,000 tons. At the rate of development which prevailed in 1929 the last chapter in the history of this resource will soon be written. It might be added, however, that the United States possesses large quantities of lower grade ore; but unless processes of extraction and production are improved, the cost of producing iron and steel will be materially increased when the better resources have disappeared.

But at that, our position is much more favorable than that of the other industrialized nations. Some have very meager supplies. Practically all are importers of considerable tonnages of ore. Among others, Japan presents an interesting situation. Her iron and steel industry is expanding, and producers look forward to the time when they can supply large quantities of finished steel in the Far-Eastern markets, if not to the Pacific seaboard of the United States. Domestic demand offers new opportunities. The military needs must also be given consideration. But Japan contains only small iron reserves, and it has become necessary both to import crude iron, and to invest capital in outside resources. For these purposes, Japanese capital has been invested in China, Manchuria, and Korea.

With such conditions in sight not only for iron ore but for other minerals, it has been deemed advisable to obtain control of such materials wherever they exist in sizable quantities. Petroleum, of course, is in this class and there has been a world-wide struggle for control. Copper, tungsten, manganese, tin, and natural nitrates are also in this category. Industrialists of the leading nations, sometimes with the sanction of their governments, have been active pioneers in the discovery and exploitation of such resources. This involves the services of trained geologists and engineers and the export of large amounts of capital.

American companies are actively interested in the development of copper and vanadium resources in some of the west-coast countries of South America, of manganese and iron in Brazil, of petroleum in Mexico, Venezuela, Colombia, and other places, and of various mineral resources in other parts of the world. These are only illustrations of the activity of capitalists in the leading nations.

Extent of Foreign Investments

Much of the capital which goes abroad is in a form which escapes record. Thus it is impossible to give final information as to the amounts which cross national borders. For several centuries, British enterprise has been engaged in exploiting outside economic opportunities, and, in the course of time, large amounts of capital have been piled up to her credit. Investors of the United States are new adventurers in the foreign field, but since 1900 they have increased their ownership in foreign property to \$15,000,000,000 or more. Smaller sums are claimed by half a dozen other countries. By far the larger proportion of these amounts are in productive enterprises. Such investments serve at least two purposes; namely, the creating of new channels of trade, and the founding, or enlarging, of industries which supply goods for both domestic and foreign use. They have created industry and commerce in many regions which had none before, and which probably would be deprived of the advantages of such activities without foreign assistance. In this manner also they have created new commercial areas, which, in the aggregate, supply billions of dollars worth of goods to world trade.

The Growth of American Investments

The rapid rise of American foreign investments has been contemporary with the unusual growth of home industries, and with the expansion of our foreign commerce. A summary history of American investments abroad is given on page 502.

Factors in Economic Development

The quantity and quality of the work which the people of a region or nation perform are the products of many variables. In general, industrial progress depends upon the character of people, the nature of their physical environment, and the kinds of institutions they create. It is sometimes said that mankind is dominated by nature. However this may be, human beings have a way of modifying their environment in important respects. In this regard the human resource is probably more important than any other, and this is probably even more diversified than natural surroundings. Even in a small community, the inhabitants differ greatly in talent, skill, and in capacity for work and progress. This is obvious to anyone who is given to observation. In fact, the stages of industry to which people attain is the product of many factors, and people and regions differ greatly in

MODERN WORLD TRADE

AMERICAN INVESTMENTS ABROAD IN 1900, 1909, 1912, AND 1930⁹
(IN THOUSANDS OF DOLLARS)

AREA	1900	1909	1912	1930
Europe	\$ 10,000	\$ 350,000	\$ 200,000	\$ 4,929,277
Canada	150,000	500,000	400,000	3,941,693
Mexico	185,000	700,000	800,000	807,777
Central America	10,000	50,000	40,000	160,799
South America	35,000	100,000	175,000	3,041,926
Cuba ..	50,000	130,000	220,000	1,066,551
Other West Indies	10,000	15,000	7,500	166,933
Africa				117,829
Oceania				419,294
Asia	5,000	175,000	60,000	1,022,949
Others	45,000			
Total	\$500,000	\$2,020,000	\$1,902,500	\$15,675,028

capacity for progress. We are confronted with a singular fact in observing the peoples of the world; namely, that, in many cases, human beings are settled in the midst of great natural resources which they have not learned to use. The American Indian is an example; but he is only one of many illustrations. Adherence to tradition, religious institutions, lack of technical information, inability to stand the grind of hard work, among other causes, prevent some peoples from sharing in the economic advance of a few of the western nations. Accumulation of capital and the acquisition of technical skill are obtained only as a result of years of effort. For this reason, poorer or more backward people require assistance from the nations that have succeeded in creating wealth and in developing industries.

Nor is this the whole case. In many instances the people who reside in a given area are not aware of the resources of the lands which they inhabit. The work of experienced geologists and mining engineers is required to make the discoveries and to estimate the industrial possibilities. Backward people do not even know the commercial uses of many of the products in their midst. This knowledge must be brought to them. For better or for worse, foreign enterprise changes these conditions and in so doing not only opens new regions for commerce but increases greatly the volume of commodities which move in international trade.

⁹ P. D. Dickens, *Trade Information Bulletin No. 767* (U. S. Department of Commerce), p. 24.

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CHAPTER XXXI

THE PRINCIPLES OF INTERNATIONAL TRADE

The actual policy of the nations in the conduct of international trade departs to a marked degree from the laws, or principles, of the case. The principles prescribe one procedure, the practice follows quite another, the extent of the departure varying from nation to nation. As a rule, those who are responsible for national policy do not deny the validity of the principles, but their point of view is that they are not applicable at particular times, nor for particular nations. Yet the laws do operate, however much they may be circumscribed by regulations, otherwise there would be no trade.

Reasons for Departure from Principles

It is the "pure" theory that is violated, that is to say, the theory as it would operate without lets or hindrances, or as some would say, without "frictional" elements. One reason for the gap between economic laws and political policy is that in many cases the latter has grown as a kind of patchwork, sometimes extending back for centuries, and the nation's economic activities have been gradually adjusted to changing policy. An abrupt departure from established procedure, so it is contended, would be disastrous not only for particular industries but for the nation. The reason is that the national economic organization is a network of relations, and the destruction of any of the strands would affect all the others. Possibly this is one reason why those who are free traders at heart hesitate to put their "theories" into operation, at least by a single act of the legislature.

Moreover, within a nation, the interminable clash of interests is a factor in the wide spread between practice and theory. The immediate welfare of consumers, merchants, manufacturers, and producers of raw materials is not a homogeneous matter. The chief concern of consumers is the maximum purchasing power for their money; but consumers are farmers, laborers, clerks, among many others, and it often happens that the particular interest of each of these is not absolute, but relative. In some countries, farmers on poor, or mediocre,

land cannot compete with those of other regions who have been favored by nature with a higher degree of natural productivity. Such farmers feel the need of defense against the lower cost operators; in other words, defense of a price level which would enable them to hold their own in the market. But such farmers are consumers and insist on as low a price as possible for the commodities they buy. These clashes are not only inevitable but universal. An individual is a bundle of economic interests some of which clash with others. If persons within a nation were consumers and nothing more, there would be little or no disagreement with respect to foreign trade policy; but this is never the case.

Then, there are sometimes special reasons for the departure of practice from theory. Most of the arguments in favor of protection fall in this class: for example, the demand for defense against the dumping of foreign products on domestic markets; the need of building up industries which are necessary in times of war; and the infant industry argument. With respect to this last contention, it is usually assumed that a nascent industry labors under certain handicaps; it has not as yet been able to develop sales, to organize markets, to train a labor force, to build up a scale of industry which makes possible a reduction of costs, and to acquire the experience which is necessary for success. Hence, competition with established industries or nations, where these necessary elements have been supplied, would be impossible. Thus the claim is made that it is necessary to tide the industry over the preliminary stages of growth. But it seems to be implied in this argument that as soon as the infant stage has been passed, protection can be removed and the industry allowed to stand upon its own. The history of the case reveals the fact that the policy rarely develops in this way.

Finally, as a reason for ignoring the abstract laws of trade, is the tendency on the part of legislators to think of immediate instead of ultimate results. There is an element of emergency in all laws, and, as a result, an enactment by a legislature covers a situation as it exists to-day, and not as it would gradually work itself out over a term of years. Laws in the economic world do not describe a single occurrence which is done and finished for all time, but a process which flows on day after day, and year after year. The capacities for production of individual companies, or the industries of a nation, are constantly changing, and relative positions are in a state of flux. A region to-day may have a great advantage in the production of copper or manganese,

or anything else, but for one reason or another, in the course of time, that advantage may pass away. A survey of the iron ore producing regions of the United States would provide an example. Pennsylvania, which was once the ranking producer, lost its position with the development of the resources of the upper Great Lakes. The shift of dominance in areas of petroleum production illustrate the same thought. But this preëminence passes from one to another not because of exhaustion of the resource but because of a greater advantage in production in other areas. The shift in world markets, and the rise and fall of national dominance over trade, have been among the most obvious facts of commercial history, as have been also the frantic measures on the part of declining nations to prevent their stars from setting. The great forces involved in the process of economic change are much more potent than acts of men or of legislatures, although the latter sometimes give a temporary advantage. This is also the case with the laws of international trade.

The Law of Comparative Cost

This is the corner stone upon which all international economic relations are built. Fundamentally, trade within sections of a country is based upon the same principle as trade among nations. The presence of political boundaries sometimes obscures this fact. There are, indeed, superficial differences between these two types of commerce, such as the existence of different kinds of money units which make necessary the translation of one into the other, differences in languages, and sometimes in habits of consumption. But these conditions are not basic. They may retard somewhat the free flow of goods between nations, as compared with the movement within national borders, but fundamental advantages, or disadvantages, still exist.

The law of comparative cost assumes a differential of advantage, or of disadvantage, in production. In many cases it is not necessary to make the assumption, because the difference is an observed fact. This is true of the many products which are exchanged between the people of the tropical or sub-tropical areas and those of the temperate climes. If one were willing to incur the expense, coffee, tea, cacao, coconuts, and many other products could be produced in temperate zones, but it would be obviously ridiculous to try the experiment, at least on a commercial scale.

Likewise, many minerals are distributed in certain areas in such obvious abundance, as are iron ore in the upper Lake areas of the

United States and gold in the Rand, that it is patent that cost differences exist. But, on the other hand, with many manufactured goods that move in international trade, we assume that there is a cost difference because there are differences in selling prices. In such cases, we are never sure that foreign manufacturers do not sell products below their cost of production, nor are we certain that in making selling prices such producers fail to take into account factors which are real costs. This is undoubtedly the case with agricultural commodities, particularly where farmers "mine" the soil, relying temporarily on natural fertility to enable them to sell at relatively low prices. In such cases, the fertility will be exhausted at some future date and it will then be necessary to incur expense to restore the natural elements. In these various respects, price data are an unreliable test of comparative costs or even of comparative advantages. However, merchants dealing in international trade are governed by price considerations, and to them the price differential, however attained, is a real advantage.

The law is stated in various ways, but the substance of the idea is that advantages in production vary from region to region. Some of these are created by natural conditions, others are man-made. For given commodities, the dealer will buy where the transactions yield him the greatest benefits, and the same purpose governs selling. Or, to think of such trading in terms of national economy, a country exports the goods which it is willing to sell at lower prices than prevail in various outside markets, and it buys abroad commodities which bear lower prices than those produced at home. If the assumption were true that low prices are the result of low costs, it would follow that domestic dealers buy in foreign markets where the cost is lower than at home, and sell abroad those articles in which domestic costs are lower than prevail elsewhere. Thus, from the consumers' point of view, the best policy is for the nation's merchants to shop in world markets for the purpose of obtaining goods where production costs are least; thereby consumers' purchasing power would yield the largest return in goods.

It might be inferred from what we have said that if labor, capital, and management are employed in regions, or in a manner, in which these yield maximum returns, and if such regions trade with others which are organized on the same basis, the incomes of consumers, measured in whatever terms, will be larger than if purchases are made in places where the work is organized on a less effective basis.

A country may have an advantage, compared with others, in the production of a number of commodities, but greater superiority in some

than in others. If trade moved without restrictions, one would expect to find that productive efforts were largely concentrated on the goods in which the greatest advantage existed, because in such fields the combined factors of production would have the largest yield, and consumers would get the most for their money.

These considerations are abstractions to which actual practice tends to conform, but it misses the mark, sometimes by wide margins, in the actual process of trade. Free competition, which the reasoning underlying the law of comparative costs assumes, does not exist, largely because all nations put various restrictions on incoming, and sometimes on outgoing, commerce, and partly, also, because such competition assumes rather complete knowledge of all the circumstances surrounding purchase and sale, and willingness of traders to yield absolutely to the price motive. Every one knows that these conditions do not exist in actual markets. Yet an understanding of the principles of trade serves to make clear the underlying conditions.

Reasons for Varying Advantages

Some European writers have been over prone to attribute the progress of the United States both as a producer and foreign marketer to the prolific nature of our resources. No one can gainsay the fact that, when other conditions have been supplied, natural abundance gives a nation great advantages. It happens that the United States has been unusually favored with both abundance and variety of materials, more so than any other nation. But, in important respects, our abundance differs from that of other parts of the world and thereby hangs our great opportunities for trade. We have referred to the fact that while climatic conditions map out broad zones in which vegetable products thrive best, man has succeeded in extending the areas in which crops may be successfully grown. But there are limits to this procedure, and in the end the mandates of soil and climate determine where the advantages lie. Thus, to give only one example, the tropics are without competitors for most of the products which such regions yield.

On various occasions we have referred to the distribution of minerals. It is obvious from these conditions that the presence of such materials in the proper quality for commercial use, and in considerable quantities, bestows upon the favored regions benefits which others do not possess and creates differentials which are the basis for trade.

But physical resources are only one element in either domestic progress or the development of foreign trade. The appropriate human

qualities are required, such as initiative, foresight, business instinct, thrift, and capacity for work, and these, also, exist in varying degrees among the peoples of the earth. Where such capacity is combined with peculiarities of skill and with organizing ability, there is created a differential of first moment.

Likewise, industrial technique varies from country to country. Sometimes it exists in very simple forms, as in the working of handmade textiles and pottery; but, in other instances, it consists of delicate skill required for the making and calibrating of scientific instruments, which often requires not only great skill but an infinite amount of patience. There is a marked difference among workers in capacity for this type of work. In any event, industrial technique is sufficiently a characteristic of the workers of some nations to bestow an advantage in production and sale. Herein is one of the advantages of the industrial nations, namely, the presence not only of highly trained technical men, but of skilled labor to execute the work. A highly developed machine technique has enabled such nations to produce at lower costs than is possible among countries less highly organized. The possession of great national wealth emphasizes this advantage because it usually provides a surplus for experiment, for the education of men and women, and for the development of specialized skill.

In this connection a large domestic market not only confers an advantage in selling at home, but in marketing abroad. Such a market makes possible the most effective localization of industries, quantity production, and an effective organization of the market, all of which tend to lower production costs and promote sales. This is particularly the case with articles that can be readily standardized and fabricated by machine methods. Without an extensive market such processes would be impossible. Thus a country with a large domestic market which is organized for quantity production enjoys unusual opportunities for sales to countries which are not developed in this way. Many minor differences occur among the products of the nations. Although in individual cases these may be of no great significance, in the aggregate they sometimes account for considerable volumes of trade.

Consuming versus Producing Power

With certain qualifications it can be said that demand and supply are merely two aspects of the same phenomenon. Except for a favored few in any community, the only way for a person to get possession of goods for consumption is to supply goods or services for the use of

other persons. This would be perfectly obvious under a barter economy. It is merely a restatement of this proposition to say that a person's ability to buy is limited by his capacity for producing goods or for rendering desirable services. This fact is often obscured when values are expressed in terms of money. It is made the more difficult to understand where people work under systems of divided labor because of the difficulty of learning how much the individual workman contributes by way of commodities or services. In this latter case, the problem of distribution of the proceeds of labor enters the question. But if one considers a community as a unit, it is clear enough that the members of the group can consume no more than they produce. This applies as well to foreign trading as to transactions within national borders.

It is the failure to recognize this fact that has led some persons to assume that a country with a large population affords a great market. But numbers of persons do not make a market. The human resource is something more than a count of people. It involves their capacity for production, and this in turn depends upon a number of human qualities as well as the type of equipment with which they work, and the system of economic organization under which they exist. The Far East, as we have indicated on a former occasion, is the most populous section of the world, but it ranks far below Europe as a market for imported articles. On our side of the globe, the consuming power in Latin America has risen to large proportions only in recent years with the improvement of systems of production which has made possible larger returns for labor and invested capital. The largest world markets are in those places where productive power is greatest. Herein is a part of the significance of foreign investments. Whatever concrete form the investment may take, it increases the capacity of the region for production, makes possible the supply of larger quantities of goods for local consumption and for export, and supplies an increased purchasing power for goods obtained from abroad.

The Relation of the Value of Exports to the Value of Imports

It might be gathered from what has been said above with regard to the relation of demand and supply that shipments from a country may be looked upon either as a supply of domestic goods or as a demand for foreign goods. We may take a similar attitude with respect to imports. Dealers are not concerned with the mechanism by which incoming and outgoing shipments are brought into equilibrium, but the result is to establish a balance. The value of the commodities which we

ship and the services which we render in international commerce is the measure of our capacity to buy goods and services from abroad. Countries which are unable to render considerable services in international trade must depend mainly upon exports to pay for imports.

The last statement suggests that the debits of a country to others with whom it trades are not necessarily settled by exports. In such cases, physical exports are not in balance with physical imports. On various occasions, we have referred to the international balance sheets of the nations to illustrate the fact that in some cases imports may exceed exports by large amounts and that this condition may continue for years. The United Kingdom is a notable instance of this phenomenon. But the same condition prevails with respect to some of the richer countries, particularly those that are possessed of a large merchant marine and that have considerable investments abroad. On the other hand, with a number of countries, the exports consistently exceed the imports. Most of the Latin-American countries are in this class.

Thus the phrase "imports pay for exports" must be taken with limitations. The international balance sheet contains a rather long list of items which represent either debits or credits incurred in transactions other than the shipment and receipt of goods. In the case of the debits, these constitute charges against a country which must be met by some means of payment and which is worked out in the complicated international money markets. But these charges usually appear as drafts or bills which call for the payment of money. Normally, a country pays its debts abroad by exporting goods, by rendering some kind of service, by exporting gold, by continuing the indebtedness for a short or a long period in the form of loans or by combinations of these methods. In the case of loans, the interest on the loan constitutes a further charge against the country which must be met at stated intervals, and, of course, the principal is ultimately paid or refunded.

The Invisible Items

Such items, among them freight, storage, and brokerage charges, may be related rather directly to the movement of commodities; but a considerable number do not have even a remote connection with exports and imports. The assortment of items, and their magnitude, varies from country to country. The balance sheet of a country like the United Kingdom, which has large foreign investments, would show large amounts for income on such sums; but with the majority of nations, this classification does not exist, or at best is present in negligible

amounts. In normal times, American tourists' expenses abroad is one of the large items in our balance sheet, but it is of little or no significance in the accounts of other countries. Charges for freight carried in foreign vessels, and insurance on cargoes, are customary items in many accounts. So also are bankers' loans, short time interest, and drafts covering governmental expenses abroad. With the richer countries, foreign long time loans, interest on them, and repayment, or refunding, of the principal, occur with interesting regularity. In the case of the United States, immigrant remittances to friends or relatives abroad constitute a sizable item. The war created certain special classes of payments which were peculiar to the post-war settlements, such as indemnities, interest on government obligations, and liquidation of a portion of the inter-allied war debt. Since the war, among some European countries, inter-government lending has become a matter of some consequence, and in one way or another such transactions appear in the international balance sheet.

The instruments representing these transactions appear in the international money markets as drafts, travelers' checks, or orders to pay money, whatever form they may take. They are bought and sold after the manner of drafts which arise from imports and exports of goods.

Thus it happens that the total charges against a country are a composite of a number of kinds of transactions wherein individuals, corporations, and even governments obligate themselves to make payments abroad. One function of bankers in the great financial centers is to provide the organization by means of which these instruments may be handled smoothly so that payments may go to the parties who are entitled to receive them when such payments are due. The buying and selling of drafts, while it is not commerce itself, is an important incident of international commerce.

Triangular Trade

If this phrase had not become a fixture in the textbooks, we might as well describe foreign trade settlements as quadrilateral, quinquelateral, or better, multi-lateral, because a nation brings its foreign accounts into balance not by transactions with one or two nations but as a result of practically all its world trade, including its dealings in commodities and services. Bills are bought in the international markets where they can be obtained at the most favorable rates, and this might be in any financial center.

In former times, when the bulk of trading was limited to a few areas, it frequently happened that debits and credits could be largely adjusted among two or three important areas. In American colonial times, for example, the continental colonies (as a group) were usually creditors with respect to certain of the West Indies, but debtors with respect to trade with England. And England was usually a debtor to the Indies. Thus, bills of exchange, gold and silver, and bullion, were delivered by the Islands to the continental colonies, and these were used by the latter to discharge their debts in England. But settlements to-day cannot follow this simple procedure.

From the point of view of commerce in commodities, the trade of one country is rarely even approximately equal to that of another; that is to say, between two given countries the exports and imports do not balance. Nor is it possible to bring a third country (i. e. triangular adjustment) into the settlement so that the three can offset debits and credits and thus approximately balance their accounts. In 1930, for example, the general imports into the United Kingdom from the United States amounted to \$748,100,000, and the exports, including the re-exports, to the United States were only \$176,600,000. Britain's balance with the United States was obviously very unfavorable. One might say that as between these two countries this is of no significance since Britain can use the bills from other countries with which she has a favorable balance to meet her obligations in the United States. But an examination of the trade lists would show that there are a very few regions with which Britain has a favorable balance of trade, and that with most of the important nations, the balance is unfavorable. In 1930, this was the case with commerce with Germany, France, Belgium, Italy, and as we have just seen, with the United States. Thus, there was no possibility of using commercial credits from certain regions to offset debits with others. In fact, the total trade balance of Britain is unfavorable, and it has been in this state for many years. From what we have said previously, it ought to be clear that Britain was not financially embarrassed because of this condition, because her charges for various kinds of services against many parts of the world usually more than offset the unfavorable trade balance. It ought to be clear, also, that the concept of triangular settlement is inapplicable because the adjustment of balances among nations is a process, and this takes place in the general international money markets without regard to the relations among particular nations, or even groups of countries.

Final Adjustments

The settlements of debits and credits among nations is a continuous process. There is no fixed time for an accounting, and no settlement day. Nor is there a clearing house, as exists in the banking world, in which the parties to international transactions meet and compare figures. The adjustments come about through the movement of gold and loans.

The substance of the so-called Ricardian doctrine is that if imports of commodities exceed exports, that is to say, if the balance of trade is unfavorable, the difference must be made up by shipments of gold. Stated in this manner the theory would not describe the methods of adjustment to-day, because many of the charges against nations are not for merchandise, but for loans, investments, and services. Still it might be contended that if the total charges, including these other items, which a country has against the others, are less than the charges of the others, the balance must be paid in the precious metal.

In fact, gold movements are important elements in such transactions, but they are not always necessary, nor are settlements always perfected in the manner just described. The customary system of reasoning is to the effect that if gold flows into a country, as a result of favorable balances of trade, the result would be a gradual increase in expenses of production and an enhancement of prices, until finally the country would become a poor place to make purchases and a good place in which to sell. In that event, the balance of trade would gradually swing in the other direction, become unfavorable in time, gold would move out, prices would fall, and the time would be ripe shortly for another swing of the pendulum. That is, the adjustment, if not hampered by laws and regulations, would come about automatically. The immediate occasion for shipments of gold is a rise in the rate of bills of exchange to the gold export point, and this happens when the supply of bills in a market falls far enough short of the demand to lift the rate to a point where it is more profitable to ship gold than to buy bills.

But the process of settlement, as carried on to-day, includes other factors than gold movements. In recent years, international loans have come to play an important rôle in both temporary and long term adjustments among nations. In the first place international borrowing may be a short time affair to equalize balances of payments from month to month, or even from season to season. In this manner, an expected

debtor or creditory position may be anticipated and a short loan used to bridge the gap between the time when a nation would shift from position of debtor to creditor, or the reverse. In the case of the United States, finance bills may be drawn in the summer in the expectation that they will be covered a little later when our wheat and cotton begin to move into external markets.

In the second place, in case of the important financial centers, funds move rather freely from country to country in response to changes in interest rates. A return elsewhere, higher than can be obtained at home, is the signal for the movement of this type of capital. In fact, until the depression period, when most countries formerly on the gold standard put rigid restrictions on the exports of gold, readjustments in the discount rates were devices employed by central banks in Europe to discourage gold exports. Such a bank, when threatened with the loss of the precious metal, raised its discount rate, thus putting a check on the flow of bills from other markets. In this manner the bank decreased its foreign credits and discouraged, temporarily at least, the export of gold. That is, in place of paying in gold, when settlements pointed in this direction, these institutions reduced the loans payable in gold. Because bills from practically all the world were bought and sold in the London market, the Bank of England was able to use this method with greater success than banks elsewhere.

The Case of Non-gold Standard Countries

Gold as a standard metal is an expensive luxury which only the richer countries can afford. Thus, many nations are on some other standard, such as silver and paper money. In some cases, these countries use devices to convert domestic money into gold if the latter is to be used for foreign exchange purposes. The gold exchange standard sometimes solves this problem. Thus, in some silver-using countries an attempt is made to maintain silver coins in a definite relation to gold. A fund is maintained for this purpose. Then the government sells exchange on gold-using countries at a fixed price.

Many non-gold standard countries, however, make no attempt to stabilize their exchanges. In that event, if the standard is silver, the par of exchange is the price of silver in terms of gold. But, even in a brief period, silver may move over a considerable price range and this injects an additional uncertainty (over the normal movements in gold countries) in foreign exchange relations.

The troubles of international traders are even greater with paper-

using countries. In such cases there is no par of exchange, at least in the customary sense. Under the theory of the "purchasing-power parity" it is contended that the real parity tends to equalize domestic purchasing power with that of other countries. One difficulty with this doctrine is that the price levels of different countries for commodities and services are not comparable. A better case could be made out for the doctrine by limiting it to goods which move in international commerce, such as the great staples. In such cases, prices in different markets do have a relation to each other, taking into account freight, insurance, handling charges, and interest on money invested in goods in transit. This signifies that the prices of such staples in world markets tend to an equality when the various charges mentioned above are taken into account.

But the "purchasing-power parity" doctrine encounters another difficulty in that it seems to put the cart before the horse. Whether the chain of events starts with changes in domestic prices brought about by varying quantities of paper money, or by changes in the price of exchange on gold-using countries, is not easy to decide. But considerable experience by some countries seems to indicate that domestic prices follow, and are not determined by, the price of exchange in terms of gold-using countries.

Fluctuating moneys, whether paper or metal, have at least a temporary effect on foreign trading. Depreciation is expected to encourage exports and to discourage imports. No doubt some countries which have changed the values of their money since 1929 have had this effect in mind. But there are many cross-currents and the results often do not work out according to expectation. For one thing, to the extent that depreciation creates uncertainty at home, it stimulates the export of capital and this brings about a lower value for domestic money in terms of foreign moneys. If this capital is subsequently repatriated, the opposite result occurs. These effects will be added to those resulting from the effect on depreciation on exports. Moreover, there is no exact correspondence between the specie premium and the changes in general prices. This premium may be higher than prices; in that event, it stimulates exports since the exporter gets the premium. But it may happen that the specie premium is below the general price level, in which case it stimulates imports. In fact, depreciation may act in one way or the other depending on the movement of the gold premium. It might be added also that a large amount of goods of domestic growth or manufacture is not exportable, and those goods

are affected differently by depreciation than the exportable goods are. Then, to the extent that depreciation adds to the price of imported raw materials, it may be something of a handicap to industries which use such stuffs in the manufacture of commodities for export. Thus these various effects cannot be reduced to a simple formula but work themselves out one way in one setting of conditions, and in quite a different way, in another.

We have had little to say in this chapter concerning restrictions on trade. The laws or principles are descriptions of movements as they would come about in the absence of legal or governmental restraints. But this condition does not exist to-day. Not only the exchange of goods, but money systems, foreign exchange dealings, and standards of value are subjected to varying degrees of governmental control. One of the most common methods is by the use of a tariff system.

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CHAPTER XXXII

FREE TRADE AND PROTECTION

The reasoning concerning the use of tariffs has centered largely around the merits of free trade and protection. But economic thought takes into account also the value of import, and even export, duties as a source of revenue. In either case, whether protection or revenue is uppermost, something can be said for and against protectionism on the one side and free trade on the other. It might be added that both these problems are worked out by states mainly from the point of view of practical considerations. But this way of considering such questions should not obscure the fact that there is value in abstract, or theoretical, reasoning because it indicates the underlying forces.

Tariff for Revenue

Whatever the national demands for production, the revenue needs are usually an element in tariff enactments. Sometimes, as with the United States, they are the original motive for tariff legislation. With respect to export duties, revenue is usually the first consideration, although other reasons may be involved, such as conservation of certain raw materials for domestic use, the encouragement of domestic manufactures based on such raw materials, and in emergencies, the conservation for home use of foodstuffs in order to assure adequate domestic supplies, and to prevent prices from rising to unreasonable levels.

Whatever the needs for revenue, import duties as a source throws a greater burden on consumers than would be the case if income were raised in some other way. For example, the customary reasoning is to the effect that such a tax makes consumers pay much more in the form of higher prices than the government obtains in the form of revenue. In other words, this form of taxation is wasteful of consumers' money.

This outcome is the result of the fact that the rise of price due to the duty is not only for the imported portion of the supply but for the domestic portion as well. The consumer pays higher prices for the total supply, but the government obtains revenue only on the imported portion. This statement is subject to various limitations. It is con-

ceivable, for example, that the duty may not be shifted to consumers in the form of higher prices. Foreign producers might be willing to make price concessions in order to retain their export markets. In that event, at least some of the burden would be on them and not on domestic consumers. Moreover, if revenue is the purpose, the tariff may be framed in such a way as to include a considerable number of articles which are not produced at home. Such a list for many countries might include tea, coffee, cacao, and a considerable assortment of luxury goods. In this case, the only supply comes from abroad. If the rise of price is roughly equal to the duty, the government receives as revenue approximately what consumers pay in the form of higher prices. It is not necessary to carry the discussion through the various ways of levying revenue duties. Suffice it to say that the consumers' burden under such arrangements may be much heavier than with a direct tax; but on the other hand, duties may be so arranged as to bring only a small additional burden.

This question involves also taxpayers' preferences. In the early years of our government the people preferred indirect taxes and they wished to have the state supported largely through customs and excises. They were at least roughly aware of the fact that they paid the tax, but since it was concealed in the price, and since they paid by the installment method—a little each time they made a purchase—the tax seemed to be easy to pay. Moreover, they were no vexatious problems of making tax returns, no intrusion of government into private affairs—things that were resented at that time.

A revenue tariff probably reduces to a minimum restraints upon international commerce for two reasons: first, since the purpose of the tariff is to obtain revenue it is the part of wisdom to keep the rates within reasonable limits. Relatively high rates might discourage demand and diminish income. In the second place, the demand for the selected articles is usually relatively inelastic. Moderate changes in price would have little effect on the quantities consumed.

Protection

For sources of revenue, most modern governments rely mainly on direct taxes. Thus a tariff as a source of income has lost much of its old significance, although from the point of view of magnitudes, in case of the larger countries, the income may be considerable. The idea of protection is to the fore. Lawmakers are confronted with practical problems of immediate moment, and consequently they

thrust abstract reasoning into the background. Moreover, they must deal with a great variety of conflicting interests, and those who are affected with those interests are moved by present conditions and are little concerned with the general welfare, or with the state of general business as it would be worked out in an atmosphere of non-interference.

Protection is supported by a system of reasoning which emphasizes the needs of infant industries, the desirability of strong home markets, the advantages of diversified industries, and the need of equalizing costs of production at home and abroad. Some protectionists also have in mind the desirability of building up industries which might be of service in war times and of protecting domestic industries against the dumping of foreign products upon home markets. Even among the most ardent supporters, protection is rarely taken to mean exclusion of foreign goods, although a certain class of persons in most countries believe in national self-sufficiency, by which they mean that their country should be able to get along largely without dependence on the outside world. But the ordinary protectionist is satisfied with almost anything within a range from equalized cost of production at home and abroad and something considerably higher.

The free trader rests his case with an exposition of the law of comparative costs; but he usually engages in a lengthy rebuttal of protectionist arguments.

Infant Industries

Since the rise of the industrial system, the infant industry argument has held the stage more continuously than any others. It is said to be one of the strongest of all the supports of the protective system. The substance of the idea is that protection is necessary to defend new or "infant" industries against competition of old established industries elsewhere. It is assumed that manufacturing technique, factory and sales organization and developed markets are all in favor of industries which have been in the field for some time; consequently, the new industries must overcome these advantages, which signifies that they will have to contend with relatively high costs in the initial stages of the business. It is assumed, also, that when the new industry has developed the appropriate technique and markets, it will then be able to hold its own. But meanwhile, protection is necessary.

These contentions meet with little or no approval of free traders. Basing their reasoning on the law of comparative cost, they insist

that if a region has advantages for the conduct of an industry, it will appear and develop in that region, but if the region does not have advantages, it is not entitled to the industry. Moreover, the free trader would urge that the general economic interests of such a region will be served best if its labor and capital are devoted to the natural and human resources with which it has been especially endowed, and if it buys what it needs from other regions which supposedly are following the same principle.

As a reply to the infant industry arguments free traders might point to conditions in the United States as a practical refutation of protectionists' contentions. They call attention to the fact that this is the greatest free market in the world, that within our borders, covering over 3,000,000 square miles of territory, there are no tariff restrictions on the movements of commerce. Then, would it not follow, if the protectionist reasoning is sound, that once an industry had been firmly established in a region, as was the case with boots and shoes, cotton textiles, and iron and steel, that an infant industry of the same kind could not get a start within this country? But the fact is that such competing industries do arise in this free market; they start from the beginning, develop technique and market organization, and, in many cases, succeed in spite of competition from the old sources. In fact, there are instances in which it is the industry in the older regions which need defense against those in newer areas which have developed on the basis of resources, or newly developed markets, or of the skill of the managers. In the case of American domestic markets, the law of comparative costs describes what actually takes place; and it might be added that the test of a good theory is the completeness with which it describes a phenomenon.

The infant industry argument cannot be dismissed lightly because it contains an element of truth. It is a fact that the trying period of every industry is in the initial stages while managers are learning industrial technique, while they are trying to develop a trained selling force and organized markets for their goods. Most new industries must pass through a developmental stage where costs are higher than they will be compared with later stages when the early problems have been solved. Old industries which can maintain operations at or near capacity, because of established markets, have a great advantage over new industries which run only with limited output. If the industry is a success the law of diminishing cost will begin to operate some time, and when this comes to pass, the new industry, if it has potential ad-

vantages, may be expected to hold its own. In the United States, manufacturers of plate glass and of silk goods could point to their difficulties in the initial stage of growth when foreign competition often rendered the outcome uncertain. But both these industries were firmly established behind tariff walls. The United States is now the largest world producer of silks. Whether the tariff only speeded up a development which would have come eventually, or whether this country would have had no silk manufacture without a tariff, it is impossible to decide.

It should be observed, also, that a new industry does not stand alone. It usually depends on supply industries and these also claim protection to tide over the developmental stages. In this manner the claimants for defense against foreign competition may be spread over a number of fields. For some of such industries the infant argument is about as valid as it is in the case of the basic manufacture; for others it is not. That is to say, it would be more economical to obtain supplies from abroad.

But something must be said on the other side. In the first place, it is rather hard to decide when an industry is an infant, and much harder to release it from the grip of protection after it has been once favored in this way. The infant grows up, but protection continues. Further, many new industries to-day make their beginning on a large scale; they are manned with trained skill, and adequately provided with capital to carry them through until accounts turn from the red to the black. In many cases the cost of transporting, handling, and marketing of foreign goods in domestic markets, afford a considerable measure of protection even in the absence of tariffs. In this respect, an import duty is only an added protection.

Moreover, if it be urged that costs and prices are higher in domestic markets under a system of infant industry protection, the protagonists of this policy would reply, as Hamilton did about 150 years ago, that eventually a number of similar domestic industries would spring up behind tariff walls, and that domestic competition would appear which would bring just as beneficial results as those of competition from abroad. Prices would be forced down, industries would be compelled to go in search of cost-reducing methods of production, and industry would be stimulated to maintain itself at the highest possible effectiveness to hold its own under such competition. Far from creating monopoly, and encouraging ineffective methods, the managers of industry would eventually be faced with rivalry in their own markets. The difference would lie not in the absence of competition, but in the fact that such struggles were transferred to domestic fields; if competition be a

benefit, it would still be obtained under a system of protection. There is merit in this line of reasoning. It would be difficult to prove that such monopolies as exist in American markets owe their being to protection, particularly when it is urged that it is competition, or the desire to avoid it, that encourages producers to combine. Where monopoly exists in American markets, it can be explained on other grounds than protection. Moreover, it is by no means certain that free trade among nations would prevent monopoly. Since 1895 at least, we have had ample illustrations of the fact that monopolies may be international affairs, as with cartels, whether in the form of buying or selling organizations, and whether formed for merely dividing international markets among the participants, limiting output, allotting quotas, or raising prices.

Home Markets

The "home market" argument played an important part in American tariff legislation some years ago, and, in one form or another, it has been urged in other countries. A species of this idea is contained in the policy which has been urged, notably since the depression fell upon the world, that self-sufficiency should be the goal of domestic economic development. In America are many believers in this ideal. From what we have said in former chapters relative to the distribution of world products, it ought to be apparent that if self-sufficiency were to be complete, we should have to deny ourselves many of the commodities and conveniences which we have to-day, or we should be compelled to incur such high costs of protection, in the case of coffee, tea, and cocoa, to mention only a few of non-domestic commodities, that these things would cease to be articles of common consumption. Even then, there would be some commodities which we could not produce, such as nickel and tin, among many others.

Some assumptions of the home marketers could be easily maintained. For example, it is true that foreign markets are much more uncertain than those at home; that when you sell goods abroad you must submit to foreign regulations and these may change at any time, to your disadvantage; that competition is always severe, particularly with staples, and that there is no adequate way of controlling it; and that through hostile tariff policy a foreign country may largely close a market which has been developed at great expense. The commercial practices of the nations during the years of economic distress supply many illustrations to support these points. However, such actions should not be taken as a justification of the policy of limiting the freedom of international trade.

All countries may have acted unwisely. What they did may have aggravated the conditions they were trying to cure. At least they may have had in mind present emergencies and not long run results.

The long range point of view is necessary. If the advocates of home markets have in mind the development of domestic industries which will consume approximately all the output of domestic raw materials, and a home market for finished commodities, both capital goods and those which are purchased by final consumers, which will absorb roughly the total output of factories, they assume a balanced state of national economy which is difficult, if not impossible, to maintain. The United States is a good example. From our abundant natural resources we have always been able to produce far more than domestic manufactures could consume; and presumably, if the factories had consumed the output of mines and fields, the final consumers' market would not have been able to absorb the output. Our process has been to sell abroad the surplus raw materials. We frequently produce twice as much cotton as we consume at home, and our fields have never been pushed to capacity. We usually have a large surplus of wheat, and the supply could be increased materially if there were a profitable market. Copper, lead, zinc, petroleum are in the same class, and this is true for many kinds of manufactures.

The policy adopted by the American administration in 1933 was to diminish these surpluses; but apparently it was not the serious attention of any one connected with the government to cut the output of raw materials to the measure of domestic markets. Foreign trade has always been an objective, and present policies have made no change in these ideas.

Several comments should be made upon this policy. Whatever the concrete application, the policy is expensive. The consumer bears the burden in higher prices, nor is it certain that, with diminished output, the total income of the producer is enhanced. It could be shown that the policy denies him the advantages for production which the national resources afford. By the same token, instead of facilitating the supply to foreign markets of goods which we can produce most effectively, the policy tends to curtail such exports. It does more, because it tends to shift some of the export market to producers in other countries whose costs are higher than ours, and thus handicaps the exchange of international goods on the basis of most efficient production. Moreover, to the extent that the price is advanced through systems of control, to that extent the United States becomes a less desirable place in which to

buy. That is to say, the policy works contrary to the principle enunciated in the law of comparative costs.

It may happen, of course, that a people will deliberately adopt a system of economic planning as a policy. But all this signifies is that they have set one type of ideals against another, that is to say, the ideal of stability with all the benefits it is supposed to confer, against the ideal of economic effectiveness with the advantages and disadvantages it is supposed to yield. In this manner the discussion passes from the realm of actual and theoretical reasoning, into that of ideals. We cannot criticize ideals, except to state that we like them or dislike them, but we can debate the means employed to attain such goals.

The statesmen of years past had no idea of a balanced economy. Their thought was that by enlarging domestic markets at the expense of imports we added something to domestic production. This, of course, is not the case. We only deny ourselves the opportunities of selling in foreign markets the goods we are best qualified to produce and at the same time relinquish some opportunities to buy from abroad such articles as foreign countries can produce most effectively. Meanwhile, domestic labor and capital are shifted into many high cost enterprises.

High Wages

Political reasoning in the United States has usually assumed that protection is necessary to defend a high wage scale. It is no doubt true that when protection has once been established, laborers in the high cost range of industries owe their wage level to the fact that their industries are protected. It is true also that they pay for this protection with higher prices than would prevail under freer trade arrangements. But on the other hand, a case can be made out for the proposition that the wage level is established by what the most effective industries are able to pay and that the others must either improve their effectiveness so as to meet the scale of the more efficient industries or go without labor. In short, the amount that can be paid as wages depend upon the productivity of men and machines. Efficient workers supplied with effective tools and machines produce more for themselves and for the owners of the machines than is the case with laborers working under less favorable conditions. This is obvious with handicraftsmen who operate their own businesses with their own equipment. Their income is what they can make it. Improvement in skill, or the acquisition of better tools, or both, adds to their capacity to produce an income. The case is much more complicated under systems of divided labor where workmen no longer

own the equipment, but the reasoning leads to the same conclusion, namely that improvements in human skill and in equipment lead to larger returns.

The tariff-high wage argument is beset with something of a paradox. If low wages give foreigners an advantage, how does it happen that we in the United States, with the highest scale of all countries, are not excluded from foreign markets? But the fact is that we are one of the largest trading nations, and that in many cases substantially similar articles of American make hold their own in competition with products produced by labor which receives less than the American scale. High wages and low prices, may, and do, exist together; but the conditions are, abundant natural resources, highly developed labor skill, effective management, and effective machines. Thus, the competition either in home or foreign markets is not between laborers as a class, but between particular kinds of labor, supplied with particular kinds of equipment and management. From a long range point of view, tariffs for labor protection are more of a drag upon laborers than a wage stimulant.

Possibly the error in reasoning of those who hold the tariff-wage argument is that they base their case on conditions which have already been established. It is true, of course, that where an industry which ranks down the scale in competitive advantage has been built up behind tariff walls, protection is necessary not only to assure a relatively high wage scale, but also adequate profits. Remove the tariff, and such an industry, if it continues to operate, would be compelled to cut wages and to get along with more meager profit returns. It is for this reason that the free trader thinks twice before advocating radical reforms in the tariff system. Violent changes would disrupt industries. If the free trade policy is an ultimate goal, it should be approached gradually, possibly schedule by schedule, taking first the groups that give the greatest promise of holding their own in the face of foreign competition. But all this does not justify the granting of protection in the first instance. A downward readjustment of duties spread over a considerable period gives time to shift labor and capital from less to more promising fields, from those in which advantages are meager or non-existent to those in which they are great. Here, the return to labor and capital would be greater, and laborers would not suffer from the change. Under such a scheme there would not be less production, but more; both imports and exports would expand, and both domestic and foreign consumers would be relieved of some of the price burdens.

Equalizing Cost of Production at Home and Abroad

During the last thirty years the attitude of American protectionists has receded somewhat from the position held in the decade from 1880 to 1890. Possibly one reason was the entrance of American merchants and manufacturers into the export field on a large scale and the desire not to antagonize foreigners with excessive restrictions on American imports. Moreover, with the growth of industry, particularly since 1900, this country has become a large importer of many kinds of raw products. The manufacturer would be glad to receive his foreign stuff free of duty, but domestic producers of such materials object. These clashes of interest are partly responsible for liberalizing tariff ideas.

But even the claim for protection to equalize foreign costs, as reasonable as it may seem at first thought, does not stand up under analysis. If it were possible to obtain the differentials of competitive advantage, and if duties were laid to neutralize them, the main incentive for foreign trading would disappear. Why should merchants buy or sell abroad if the transactions promised no advantage? To present this idea in a slightly different way, to equalize domestic and foreign costs is to deprive domestic consumers the advantages they receive from foreign trading. Possibly it is not the intention of those who hold the doctrine of equalization to give it a thorough-going application, but only to apply it "reasonably," whatever that may mean. But it is obvious that if the doctrine were not applied with caution, industries which operate under high labor costs would be claimants for protection, and the greater the disadvantage, the higher would be the duty. It would be possible to establish within a country almost any kind of industry, whether related to manufacture, farming, or mining, no matter how ineffective the labor, or how high the cost, if the protection were great enough. But, on the other hand, the burdens on consumers, the larger number of whom belong to the laboring classes, would be proportionately greater, and prices in most instances would be so high as to prohibit quantity consumption. In this manner, protection would defeat itself.

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CHAPTER XXXIII

RESTRICTIONS ON FOREIGN TRADE

The depression period has been the occasion for inventing new, or reviving old, methods for bringing foreign trade under control. Governmental policy is rarely devised so as to stimulate imports, and on the other hand, many measures, whether legislators know it or not, have the effect of discouraging exports. The import trade is usually controlled by some form of tariff, but in certain instances the measures actually go further by putting certain classes of goods under an import ban, by putting some goods under a quota system, by the temporary suspension of certain kinds of imports, as with Germany in 1934, or by absolute prohibitions on certain imports, as with Australia in 1932 and 1933. Sometimes the control operates through the attempted regulation of foreign exchanges, or through the manipulation of the money systems. Commerce among nations is not free, and it probably never has been in this state. Even in the cases of countries which have been nominally on a free trade basis, duties have been levied for revenue purposes and these have affected the free flow of trade in one way or another.

Kinds of Duties

As suggested above, duties may be laid not only on exports, but on imports. With respect to the United States, the student probably knows that the use of export duties is prohibited by the Constitution—a provision which was brought about at the time of the framing of that document by the opposition of the southern States. But in the recent war period, exports, as well as imports, were put under license, and these prohibited trade with certain areas, and greatly restrained commerce with others. These, however, were adopted as war measures. In the case of foreign countries, there are no constitutional provisions prohibiting the legislatures from imposing export duties, and such measures are frequently employed. These matters will be discussed later. Import duties are made to serve several purposes of which protection of domestic industries, or revenue, are the dominant motives. The construction and

administration of tariffs, at least as such matters are handled to-day, lead into a maze of technique which is sometimes difficult to understand, and the results of which are not easy to ascertain.

Export Duties

Many countries, and sometimes their colonies, impose duties on exports. In some instances these charges are only emergency measures, employed at times of threatened shortage. Sometimes the policy is more or less permanent, designed to keep a sufficient quantity of materials at home for use of domestic industries. Upon occasions, the purpose may be to encourage the founding and development of domestic manufacturers based on local resources. In this event, the reason in favor of such a policy partakes of the nature of the infant industry argument so often used in connection with import duties. With certain French, Portuguese, and Spanish colonies, the laws prescribe variations in duties depending on the destination, whether to the home country, to foreign areas, and sometimes a distinction is made between European and non-European ports. Portuguese colonies distinguish, in the rates of duties levied, between vessels of Portuguese and those of other nationalities. To give only one illustration: sugar exported from Portuguese West Africa (Angola) pays 4 per cent ad valorem if transported in Portuguese ships, 5 per cent if in foreign ships, in both cases where shipments are for Portuguese ports, but if for foreign ports the rates are 6 per cent ad valorem if transported in Portuguese ships and 7 per cent for shipment in foreign vessels. A considerable number of articles exported from this colony are under this scheme of export duties. The obvious intention of these regulations is to give some advantage to domestic shipping and to afford home manufactures the opportunity of the first offer for colonial products.

In most cases, as with import duties, revenue is the purpose of the levy. It ought to be said, also, that in addition to export duties, the countries use other forms of export regulation, such as license control, rationing, and restrictions according to quality, or price, or both. The duty may be put upon the specific or ad valorem basis, although the latter seems to be the rule. Some larger countries do not make use of export control in any form. In 1927 this condition prevailed in the United Kingdom, the Irish Free States, Germany, Netherlands, Denmark, and Sweden, among others. In this year, France imposed a considerable number of export duties, as on animals and animal products, and fresh vegetables. Italy used such duties on several metallic ores,

of which she had very limited supplies, crude tartar, wine lees, rags of all kinds, and the export of all art objects or antiquities was liable to an export tax based on an ascending scale beginning at about 15,000 lire, when the rate was 20 per cent, and mounting to 40 per cent when the value was 75,000 lire or more. This was partly in the nature of a luxury tax for revenue purposes, and partly to discourage the export of certain goods, notably antiquities, which the country wished to retain at home.

In 1927 Czechoslovakia placed export duties on rags "and other refuse" for paper-making, and this included not only cotton, silk, linen, and woollen rags, but pulp, paper clippings, old cordage and old rope. Finland supplies an illustration of the method of assessing the tax. Several classes of wood products are subject to duty, but in the case of trunks for sawing, beams, building-wood, sleepers, pit props, and pulp-wood, among others, when exported by sea the duties "may be paid on the net tonnage of the shipment shown on the tonnage certificate of the vessel at the rate of quadruple the rates" fixed for an export of the individual items. But if the shipment is a mixed cargo, the owner may pay an export duty on the whole shipment "at the rate of duty to which is subject the most highly taxed part of the cargo, instead of calculating separately the duties payable on the various kinds of wood."

Among the South American countries the export duty is used mainly for revenue purposes, although, at times, other reasons may be involved. Colombia, in 1927, had a tax on pearls, straw for hats, ivory nuts, gold coin and jewelry, and on forest products from public lands; Ecuador taxes tagua nuts, cacao, hides, and straw; Bolivia taxed the export of wool, vicuña skins, wood, live animals, chicle, rubber, and various ores and metals, among others. Under existing governmental arrangements in Brazil, the States are permitted to levy duties, and practically all of them exercise this right; in consequence, a number of systems of export duties prevail throughout the country. Chile has used the export tax for years as one of the main sources of national revenue. Natural nitrates, being one of the largest exports, have borne the burden of this levy, but considerable amounts have been contributed by foreign shipments of iodine, borax, silver, and iron ore, not to mention all commodities. In 1927 the tax on nitrates amounted to 10.14 gold pesos (of 6d sterling) per metric quintal (220.46 pounds). More recently Peru has applied this type of tax to vanadium, tungsten, copper, and other ores and concentrates, as well as to a considerable list of agricultural and forest products.

A special application of the export duty, or better, license, existed in case of the British rubber producers in the Near East. The levy was

based on a certain minimum duty for exporters who kept within their quota. But for those who shipped in excess of this amount, the rate was increased step by step, depending on the amount of the excess shipments, and grading up to a certain maximum rate. In this case the main purpose was to discourage over-production.

It is evident from what we have said above that the export tax is susceptible to about as great a variety of applications, and for as many purposes, as the import duty. It would not be far from the fact to say that the use of one is about as extensive as that of the other. The results must be measured by the purpose in mind. There is no doubt that exporters make use of clever devices, as they do with import duties, to escape or evade a portion of the tax, a condition which calls for a great deal of shrewdness on the part of governments to frame the measures in such a way as to reduce evasion to the minimum. At times, this calls for a rather elaborate administrative machinery, which, in many cases, must leave the immediate application of the laws in the hands of port, or customs, officials. From the point of view of general commerce, these many imposts constitute a considerable burden on trade; in some instances they divert industry and commerce away from its normal channels. In the long run, they are probably just as much of a burden on domestic consumers as import duties. A rather common practice, for example, is to subject hides, skins, and leather to export duty. In the first place, this denies to the producer the more profitable market for his goods; and in the second place, it gives some encouragement to manufacture at places which are less advantageously situated for such industries than other regions. In these instances the burden is on both producers of raw, or semi-finished, goods and on consumers.

Those countries which are surplus producers of metallic ores, or other minerals, run the risk, through the imposition of export duties, of increasing the price to foreign buyers, and of stimulating the quest elsewhere for such materials. How much the Chilean export tax on natural nitrates contributes to this search, it is impossible to decide; but we can say that when the cost of production of natural and manufactured nitrates reaches a parity, the tax will militate in favor of production by the latter method. As with import duties, legislatures are often guided by short range objectives, and by the demands of particular industries; the long-run effects receive only minor consideration.

Import Duties: General Considerations

International commerce has never been free. Even the so-called free trade countries tax a considerable range of commodities, at least for revenue purposes, and although they may, in some instances, impose compensating domestic duties, the effect, in any event, is to put some restraint on the free movement of goods. Modern governments have developed great ingenuity in defining and classifying commodities for tariff purposes, and in increasing the number and breadth of schedules. The outcome is that imported articles are subjected to a more far-reaching tax system than prevailed in former years. This, of course, calls for minute studies of the prospective operation of the system, a task which is impossible of adequate solution. Yet this is the job of tariff commissions, tariff boards, legislative committees, and other similar organizations. The American Tariff Commission Act of 1916 imposed the following duties upon the Commission: to investigate matters relating to tariff administration, to study the fiscal and industrial effects of the operation of our tariff laws, to investigate tariff relations with other countries, to study foreign tariffs and attempt to ascertain their effect on American industry and commerce, and to study the conditions of competition in foreign trade. Obviously, this is a large order, and if the Commission succeeds in obtaining fairly adequate relative information, it is to be complimented. Law-making bodies have a way of ignoring the findings of a board or commission, and of over-riding its recommendations. Whether such commissions have brought us nearer to "scientific" tariff-making is impossible to decide, but the presumption is that we are not much nearer a rational tariff basis than we were before the era of the boards.

Tariff Making

In practical tariff-making, legislators may have several purposes in mind. They may be concerned primarily with revenue; their goal may be protection; or it may be a mixed purpose, revenue and protection. The purpose in mind is important with respect to the commodities which are chosen for tariff treatment. If, for example, the purpose is revenue and nothing more, such commodities will be selected for tax purposes as will yield the necessary revenue, and at the same time the domestic competitive system will be left in about the same position as it was before duties were laid. This may be accomplished by selecting articles of non-domestic production, or if some domestic products are

chosen, of placing a compensating excise on goods of home growth or manufacture. When considerable revenue is needed, it is usually impossible to find enough "pure revenue articles" to bear the burden. In that case, the tariff schedules will include some goods of domestic production and the tariff, though primarily for revenue, will yield some incidental protection. Some of the early tariff-makers in the United States were in this quandary. Until 1816, or at least until the war tariff of 1812, the primary thought in the United States seems to have been revenue; but the debates in Congress at that time, reveal that there was a great deal of discussion concerning protection. But it is reasonable to take the point of view, which some have taken, that if a certain amount of revenue were to be raised, and if revenue articles enough could not be found to produce the income, then others would have to be selected; in that event, why not impose the tariff in such a manner as to afford some protection to the most needy industries?

If the purpose is protection, the law-makers select the articles which need defense against foreign competition. Information bearing on the competency of domestic producers to stand their own with foreign goods in the market is always difficult to obtain. For one thing, relative, or even absolute, costs of production are difficult to obtain, and if they were known at the time a law was put into effect, they probably would not serve the purpose of the tariff-makers, because costs both at home and abroad are constantly changing. Protection itself is an ambiguous word. But it is rarely taken to mean total exclusion of products of foreign make. The Republican party at one time took the stand that there should be enough protection to "equalize the cost of production at home and abroad," so that domestic producers, however great their disadvantages compared with foreigners, would not be undersold in their own markets. We have just suggested the difficulties in obtaining relative costs.

Valuation

In a measure, this problem is met through some system of valuation. From country to country, a number of methods are in vogue. When the duty is on an ad valorem basis the discovery of the "exact" or "real" value is of great importance. Official valuations, that is to say, a list of prices constructed by the tariff authority, are of little assistance. Such values are usually arbitrary and may, or may not, meet the conditions of the case. Possibly for this reason, the system of official valuation has been largely abandoned.

It is possible to establish values on the basis of declaration by importers; but this, also, may lead to uncertain results, unless the elements upon which values are calculated are definitely stated in the law. It may be the value at the time of arrival of destination, or at the date of exportation. Moreover, such values may include one, or all, of the various charges involved in shipment of the goods from point of origin through the port of entry. Thus the "fair value" may become the "fair market value" in the exporting country plus the costs in delivery from exporter to importer, plus the percentage of value the country decides to levy as an import duty. In practice, this method may be given various applications. Sometimes the question arises as to at what time the value is to be taken; for example, the date of purchase, of export, or of receipt. It is evident that the value of goods may have changed over any of these periods, and consequently it is important to specify the date at which the value is to be taken.

The term "fair market value" which appears in a number of tariffs is ambiguous. It may mean the "fair market value" as indicated by goods sold for home consumption at the time and place of export. But such valuation is further complicated by the fact that certain allowances may be made to exporters, such as bounties or drawbacks, which might create a real difference between domestic and export values. Our own recent tariff acts prescribe as a basis the foreign value, or the export value, whichever is higher. The concept of foreign value is further defined as the "market value or the price at the time of exportation of such merchandise to the United States at which such or similar merchandise is freely offered for sale to all purchasers in the principal markets of the country from which exported, in the usual wholesale quantities and in the ordinary course of trade, including the cost of all containers and coverings of whatever nature, and all the costs, charges, and expenses incident to placing the merchandise in condition, packed ready for shipment to the United States."¹

The law then prescribes the procedure in the event that neither the "foreign value" nor the "export value" can be ascertained. Thus, if neither of these values can be obtained, then the appraiser shall take the United States value; if this cannot be obtained, the cost of production shall be used, and so on through a number of conditions which may arise for lack of information concerning values.

The British Import Duties of 1932 proposes a different arrangement. Here, the value for tariff purposes becomes "the price which an importer

¹ *Tariff Act of 1922* (U. S. Treasury Department), Title IV, Sect. 402 b.

would give for the goods on a purchase in the open market if the goods were delivered to him at the port of importation, freight, insurance, commissions and all other costs, charges, and expenses incidental to the purchase and delivery at that port (except any duty or customs), having been paid." ²

It is evident that there are a number of bases for "fair value" as defined in the laws. At best, any basis gives only approximate values, but this is all that can be done under the circumstances, because costs differ from place to place, both in the importing and exporting countries, and market values are in a state of constant flux.

Classification

In recent years the tendency of tariff-making has been in the direction of more minute classification of goods. The tariff acts of the United States include several thousand dutiable articles. These are first grouped into "schedules," fifteen in the Act of 1930, and the schedules are again listed in subdivisions or "paragraphs," each of which is supposed to contain similar commodities; to each of such subdivided lists is attached the rate which is to be applied. Schedule 1, for example, covers chemicals, oils, and paints; schedule 2, earths, earthenware, and glassware, and so on.

These acts include also an extensive section on administrative provisions which are directions to officials in executing the laws. Herein one will find the definitions of terms, the prescribed methods of report, routine for appraisal, provisions for inspection, methods of appeal, methods of conversion of currencies, and the inevitable penalties, among various other divisions of the administrative machinery.

In practically all countries certain articles are exempted from duty. These are usually enumerated in a separate schedule called the "free list." But at that, the various schedules including the free list may not enumerate all articles of possible import. In that event, several methods may be employed. One is to treat the non-enumerated articles as a class by themselves, assessing a duty or duties according to conditions; or they may be assimilated to the enumerated articles in cases where they can be made to fit a classification; or they may be given a separate rate if a basis for classification cannot be found.

One would search in vain for a method of classification which would pass muster in the hands of an analyst. The American method seems to

² Hodgson, R. A., *An Introduction to International Trade and Tariffs* (Sir I. Pitman and Sons, London, 1932), p. 162.

feature the raw material source; thus we have metals and their manufactures, wood and its manufactures, agricultural products and provisions, cotton manufactures, etc. These classes, however, are by no means exclusive. Chemicals, for example are of both mineral and vegetable origin, and cotton, sugar and tobacco, which are given separate classifications, are agricultural products. It might be observed that the more extensive the enumerated list becomes, the greater the difficulty of finding an adequate classification, and even the classification of "miscellaneous" does not solve the problem.

Specific versus Ad Valorem Duties

The tariff authority is moved by a rather definite purpose which it hopes to achieve through the imposition of duties, but this cannot be carried out for all goods by a single method. Consequently, the framers of a tariff make use of several types of duties. These may be ad valorem, specific, a mixed ad valorem and specific, or possibly, an optional or alternative duty, a device which makes possible a readjustment of changes in value. Whether one uses one method or another depends partly on the nature of the commodity, partly on the comprehensiveness of the tariff act, and partly on other circumstances. The more complex the tariff becomes the greater the difficulty of using the ad valorem system, because of the difficulty of applying systems of valuation.

Specific duties are based on some appropriate physical measurement, such as weight, capacity, length, tale. But the use of this method does not preclude the use of values. In fact, the specific duty often states, or implies a price, or range of prices, along with the measurement. In our Tariff Act of 1922, steel ingots, cogged ingots, blooms, slabs, and a considerable assortment of iron and steel wares, grouped in one paragraph, were taxed two-tenths of a cent per pound when valued at not over one cent a pound; at three-tenths of a cent a pound when the price is above one cent but not above one and one-half cents, etc. The use of specific duties may be complicated by the need of defining terms. If weight is the unit, what weight shall be taken—gross, net, or some other concept which lawmakers have in mind? This question is involved notably where goods are shipped in packages or containers. A similar difficulty arises in establishing a unit for textiles, as the number of threads per square inch; or of liquids, where the test might be specific gravity and "proof" with wines and spirits, or sugar where color and polarization are sometimes the units.

Notwithstanding the difficulties, the specific type of duties offers

fewer problems than ad valorem rates, particularly where a tariff covers several thousand articles. Its terms can be made more definite, the quantities with which it deals can be more easily ascertained, there are fewer uncertainties, and, on the whole, the administrative problems are more easily handled than is the case with ad valorem rates.

It is sometimes contended that in periods of fluctuating prices, the specific type of duties is inadequate both with respect to protection and to revenue. But the ad valorem system is confronted with the same difficulties. In times of rising prices, if the demand can be maintained, the ad valorem rates yield larger revenues than do specific rates. But for certain types of goods, advancing prices, which would be further augmented by the duties, may result in curtailed demand. This may be the sequence also with articles of inelastic consumption, because elasticity with respect to demand is not an absolute, but a relative matter. Declining revenue from customs duties has been a common experience among nations in periods of hard times, and such occasions have called forth further advances in rates to obtain needed income. In the recent depression, the upward readjustment of rates has been due in many cases, and in part at least, to the urgent necessity of adding to the national income, and these readjustments have sometimes started a round of events which defeats their own purpose.

Specific duties also encounter some of these difficulties. In many cases, they are fixed amounts levied on the basis of some physical measurement. These amounts, not being in percentages, do not change with a rise or fall of prices. Thus, with the use of such duties, in periods of advances, the revenue does not keep pace with price changes. But this difficulty is overcome somewhat with those goods where specific duties are based on prices, or price ranges which, of course, move up and down with changing market conditions. In such cases income would increase not because of changes in specific duties but because of the alteration of price bases.

Moreover, "When changes in price are occurring, the regressiveness of a specific duty can be largely overcome . . . by the use of coefficients. This makes it possible to keep the duties at the desired level without undertaking the laborious and complicated task of revising the tariff, and since the coefficients can be declared at short intervals, each month or even each week, if need be, the method is suitable to cases of currency depreciation when prices are rising very rapidly."⁸

⁸ Hodgson, *op. cit.*, p. 130.

Administrative Provisions

No tariff is automatic. A detail of officers is required for enforcement. These officers must be provided with instructions and endowed with certain powers relating to interpretation. This is necessary for the reason that the verbiage of an act cannot be made specific enough to cover the particular cases that arise under a tariff régime. Thus, tariff acts not only cover schedules of duties, but they carry a considerable number of instructions as to the manner in which the officers are to proceed in particular instances.

The administrative section of our own tariff acts usually starts with a division containing definitions. Herein are classified the meanings of such words as "vessel," "merchandise," "person," "day," "night," "collector," "appraiser,"—words which seem to be clear until they are given a specific application. The instructions also lay down the methods of valuation, a rather elaborate procedure in the American tariffs.

Important provisions relate to the duties of assessors, of appraisers, for the storing and transport of goods in bond, and for the payment of drawbacks. Recent tariff acts of the United States have contained a "flexible clause" which empowers the president, under certain conditions, to make changes in tariff rates without referring such matters to Congress.

The appraiser estimates the value of the imported merchandise "by all reasonable ways and means in his power." He is not expected to examine every parcel of a commodity in a consignment, but only to "ascertain the number of yards, parcels, or quantities of the merchandise ordered or designated for examination." He must decide whether the goods have been correctly invoiced; he must also describe the goods so that the collector may determine the proper dutiable classification; he reports his decision to the collector. In the case of ports where only assistant assessors are in charge, these execute the ordinary routine of appraisal, but their work is subject to review or revision by the appraiser. Even this decision is not final, for under certain circumstances the matter may be appealed to a Board of General Appraisers, a permanent body appointed by the President by and with the advice and consent of the Senate. The laws describe the procedure in case of such appeal. It is expected, of course, that such cases will be decided on evidence. Hence in ascertaining the values "affidavits of persons whose attendance cannot reasonably be had, price lists, catalogues, reports or depositions of

consuls, special agents, collectors, appraisers, examiners, and other officers of the government, may be considered."

In many instances, goods which have arrived in port and have passed through the routine of the customs officers, are not delivered at once to the importer. He may not wish to use the whole consignment at the present time; or, with some raw materials, only portions of the stock are withdrawn from storage as required; some parts of the consignment may be designed for reexport, or for shipment to some interior point, or even for transport through the United States to contiguous territory. Provisions must be made for these methods of handling. Thus, under proper authorization, any common carrier, whether railroad, steamship line, or other types of transportation, may be designated "carriers of bonded merchandise" for the final release of which from customs custody a permit has not yet been issued. In like manner, buildings, or parts of buildings, may be designated by governmental authority as bonded warehouses in which goods may be stored pending payment of duty and final release. Such provisions are susceptible of application to many types of industries. For example, ores and crude metals imported from abroad may be delivered at bonded warehouses, or to bonded smelters, and stored or worked up into finished forms and the duty paid when the owner decides on the disposition of his products.

The statutes make provision also for the payment of drawbacks in case of goods upon which duty has been paid, but which are exported. This applies not only to finished goods, but to raw materials which have been mixed or blended. A section of our Tariff Act of 1922 contained the provision that "upon the exportation of articles manufactured or produced in the United States with the use of imported merchandise, the full amount of the duties paid upon the merchandise so used shall be refunded as drawback, less 1 per centum of such duties, except that such duties shall not be refunded upon the exportation of flour or by-products produced from imported wheat unless the amount of wheat grown in the United States equal to not less than 30 per centum of the amount of such imported wheat has been mixed with such imported wheat."

In spite of the fact that some countries have set up machinery for more rational, or as some would say, more "scientific," determination of tariff-making procedure, political elements play a large part in the actual framing of the measures, and this includes the articles covered by the tariff and the rates to be applied.

An interesting feature at the hearing which preceded our Act of 1930

was the testimony of some manufacturers that they did not need more protection. In fact, some stated that they could get along with less. But there was the proviso that the raw materials for their industries should either be free from impost or be admitted at a reduced rate. All in all, this act was not satisfactory to any of the interested parties. The final outcome of a tariff is usually a compromise. One of the sponsors of the bill stated that it was "not perfect by any means but it appears to be the best that could be obtained under the circumstances." On its way through Congress, the bill was subjected to trading and log rolling and both in method of construction and in final form was the antithesis of scientific tariff-making, which on former occasions was declared to be the accepted method of procedure.

In spite of the opposition of many congressmen this act contained in a modified form the "flexible clause" of the former tariff. In order to put in force the "policy of Congress," the Tariff Commission was authorized to investigate the relative cost of production of certain commodities at home and abroad. Such an investigation was to be made at the request of either house of Congress, or of the President, or by the Commission on its own initiative. After this procedure the President was authorized to approve by proclamation the recommendations of the Commission "if in his judgment such changes were necessary to equalize the differences in cost."

Trade Concessions

Although the primary purpose of tariffs is to produce revenue and to yield protection, in many instances they are so constructed as to permit concessions in the event that advantages may be received in return. These concessions are usually obtained by means of treaty and are often in the form of bargaining arrangements.

The United States has been a party to commercial treaties since the founding of the Federal government, but in the earliest years the purpose was more to gain concessions from other nations which surrounded their commerce with rigid restrictions than to make material grants. In fact, in this period of our history our rates were very low, and we did not have much of a margin from which concessions could be made. But since the régime of high tariffs, notably after the era which began with the McKinley tariff of 1892, we were in the opposite position; rates were high, with a prospect of going higher, and there were wide margins from which to grant concessions to countries which were willing to make reciprocal arrangements.

The tariff law of 1897 made provision for high protective duties but also contained a section relating to reciprocity. The act authorized the President to negotiate treaties allowing reductions as great as 20 per cent of the rates established in the tariff. By this system there was established a single system of rates from which concessions could be made by treaty. But it is possible to handle such matters in another way. A tariff may establish maximum and minimum rates, with either accepted as the base; or an arrangement may exist, as with some of the divisions of the British Empire for a three-fold rate arrangement; one for those within the empire, another for those outside who do not discriminate against dominion goods, and a third for those who do discriminate. The purpose is to give special treatment to dominion commerce.

The famous "favored nation clause" provides for a species of reciprocity by which the participating nations not only agree to make concessions from their tariffs but to extend those concessions to other nations with whom they may have treaties. The clause, however, is susceptible of at least two interpretations: When we in America provide for most favored nations treatment, we do not mean that it is without limitations or restrictions: The grant of "most favored nation" treatment may be complete, but, on the other hand, if the original treaty contained only reciprocal arrangements the most the other favored nations can claim is equivalent concessions. In the European interpretation a grant to one of the "favored nations" is extended to others without restrictions. A significant feature of favored nation treaties is that they frequently lead to a rather general liberalization of ideas concerning restraints on international commerce, and sometimes turn out to be an entering wedge for a rather widespread reduction of rates.

Restrictions on Commerce During the Depression

The years from 1929 to at least 1934 were notable for drastic restrictions on international trading, although at the latter date some nations were driven by sheer necessity to ease their restraints. In some instances, governments went back to the war method of licensing both imports and exports. Some tried a quota system; others developed control through regulation of money and of foreign exchange. Some even tried absolute prohibition of certain imports. Various motives were involved such as more protection, more revenue, the supposed need of defending national credit by balancing exports and imports, the protection of national currencies and of the domestic banking position. In some instances the elevation of duties was for the purpose of offsetting

rates levied by other countries. In all this *mêlée* of regulation, some nations did not forget the other side of the balance sheet, namely exports, and efforts were made to force larger quantities of domestic products into the channels of foreign trade with the aids of bounties or of assistance of some kind.

The quota system met with considerable favor. In 1931, for example, France introduced a series of import quotas applying to lumber, meats, dairy products, fish, sugar, among others, and during the first six months of 1932 rationed imports of radio equipment, certain types of steel sheets, electric apparatus and leather. These quotas were based on average shipments during a period of preceding years. Turkey applied this system to more than a thousand commodities, and Poland continued her former policy of allocating quotas for given commodities received from various countries. In some instances, in order to obtain prompt action, these measures were carried out by administrative order, as with Netherlands, Spain, and Switzerland.

The license system of control was preferred by some countries, possibly because it was regarded as somewhat more flexible than the quota method, and more adaptable to immediate conditions. As a rule, the practice was to require a permit of this kind in advance for each imported consignment.

Legislative ingenuity seemed to have been unlimited in devising ways to maintain or increase consumption of domestic products while limiting imports. This was the case of wheat-mixing requirements which prescribed the use of a certain percentage of domestic cereal with the imported product in the manufacture of flour. A number of countries required the mixing of certain proportions of imported gasoline with domestic alcohol, and of butter with imported margarine.

Meanwhile, international agreements were attempted, with little or no success, to control surpluses of wheat and sugar. Some countries relied upon their own financial resources to secure a larger export sale of domestic products, as with the Chilean fund for the payment of bounties on the export of certain agricultural products, the export subsidy employed by the Union of South Africa, and the bounties on foreign shipments of coal and wheat in the case of Canada. The best that can be said for such measures is that they added something to the income of domestic producers at the expense of the national treasury, but, on the other hand, they caused further complications of the international situation.

A more hopeful sign was the attempt in limited areas to relax some-

what restrictions on foreign trading. Such measures were usually confined to contiguous nations, and were applicable where products of one region supplemented those of another. In 1931, regional tariff agreements were tried among the four Baltic countries, Estonia, Latvia, Lithuania, and Finland, which concluded a series of treaties, within the group, making special reciprocal concessions on products that the others were able to supply. In this manner, they restored some of the freedom of commerce that had existed when this area was a part of the old Russian Empire. Of the same intent were attempts to establish a customs union among some South American countries, with Argentine, Brazil, and Uruguay being the principal participants.

In 1934, the Congress of the United States authorized the President to enter agreements with foreign countries involving reciprocal trade concessions. The first treaty of this kind was with Cuba. The provisions were limited in a number of respects. The Costigan-Jones sugar legislation had previously fixed Cuba's import quota for sugar to 1,902,000 tons. But on that quantity the United States duty was reduced from one and one half cents to nine-tenths cent per pound (ninety-six degrees). The duty on Cuban rum was reduced from \$4.00 to \$2.50 per gallon. The rate on tobacco was also reduced; but this product, like sugar, was placed on a quota which, in the case of tobacco, amounted to 18 per cent of the total quantity used in the United States for the manufacture of cigars. This quota was based on a ten year average. In the case of sugar, the tariff concessions were to remain in effect only as long as the sugar quota provisions. When the latter is abandoned, the duty reverts to its former figure. A similar arrangement was made with respect to tobacco, except in this instance, the term of the duty was tied to the period of tobacco control in the United States.

Due to the fact that certain Cuban fruits and vegetables mature at an earlier date than similar products in the United States, a seasonal adjustment of rates was made to apply to grapefruits, potatoes, fresh tomatoes, okra, and a few others.

A significant feature of the international arrangements brought about by the depression is that they have destroyed, suddenly, relationships which have been in the process of development for many years. In all likelihood, the old arrangements will never be restored. It is equally true that the peoples of the world cannot realize their ideals of great improvement in economic conditions, including higher standards of living, under systems of rigid control of international trade. Commerce is a natural outcome of the differentials in advantages of production

which exist from place to place, and from nation to nation. To deny a people the opportunities of realizing upon these advantages is to put a check upon their progress.

It is possible that, as an immediate aftermath of the depression, there may arise first an interest in regional agreements, involving reciprocal concessions with respect to goods which nearby countries can reasonably obtain from others. As we have indicated above, such movements are already on foot. Whether the Briand scheme of a United States of Europe will ever be attained is for anybody to decide. Political obstacles are almost insuperable. But the scheme promises great economic advantages. In a vast number of instances the products of European nations are not competitive. Freer trade would bring enormous benefits. The regional tariff idea is susceptible to great expansion, and one line of advance toward more rational foreign trade development is by this route. But, as we have indicated in former chapters, even greater areas cannot be self-sustaining, and world commerce in certain commodities is necessary. Of course, revenue requirements are sometimes decisive factors in the formulation of tariffs. As long as nations construct their schedules in such a way as to obtain income by the use of rates which at the same time yield protection, handicaps will be imposed on international trading. But there are ways of arranging duties so as to diminish the protective effect.

An obvious outcome of depression regulations is the recognition on the part of all nations of the seriousness of handicaps on foreign trading. The fact that some are willing to go as far as regional treaties, even in troubled times, is an indication of this point of view. This suggests what might be accomplished when better times are in sight.

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