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THE EVOLUTION OF
MODERN INDUSTRIAL ORGANISATION

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THE ELEMENTS OF MODERN INDUSTRIAL
ORGANISATION

THE EVOLUTION OF MODERN INDUSTRIAL ORGANISATION

SECOND EDITION

by

F. J. WRIGHT, M.Sc. (Econ.)

*Associate Member of the British Institute of Management.
Senior Lecturer, Department of Commerce and Languages,
Norwich City College.*



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CHAPTER I

INTRODUCTION

IT is not necessary to stress the importance of the study of history to the student of industrial affairs. He recognises that although history does not repeat itself, since the circumstances of life change with the years, the roots of the present are in the past; that if men and women had not thought and acted in certain ways in the past, our material and spiritual environment would be different from what it is to-day. He recognises that geographical and social factors have influenced the kind of life he leads, that climate has had an important effect upon the way his ancestors behaved, and upon the way he behaves. The temperate climate of Britain has had its response in economic behaviour—*e.g.*, the way in which the British people developed their textile manufactures; climate has influenced the way in which the Americans have used their land to grow various types of wheat.

Nevertheless, it is too easy to see events in a wrong perspective. For many years academic historians assigned too great an importance to the deeds and sayings of minor kings and political figures whilst neglecting the broad stream of events in which these personages played a very small part. Not until H. G. Wells's *Outline of History* caught the attention and imagination of the general public did thousands of ordinary men and women succeed in seeing many historical events in something like a true perspective.

The student of industrial affairs who is engaged in the workaday world of manufacturing things or distributing commodities is similarly inclined to get his perspective wrong when studying modern industrial organisation. Too often he is inclined to imagine that the history of the world can be divided into two periods—Before the Industrial Revolution

and After the Industrial Revolution—separated by a series of events that made history before the Mechanical Age quite irrelevant to his life and work. For him, the history of modern industrial organisation began in the late eighteenth or early nineteenth century.

He is right to the extent that the modern western world became a different kind of civilisation after the events usually spoken of as the Industrial Revolution began; but it is a mistake to imagine that what is happening in the industrial world to-day has no reference to what happened in, say, the Middle Ages. Long before the Middle Ages drew to their close, there were at work forces helping to shape the Britain of to-day. The rigid patterns of life were being broken up; the hold of the feudal lord over the lives of those who worked for him was declining. The Black Death, 1348-9, hastened a process of change which came to a crisis in the Peasants' Revolt, 1381, and which liberated the peasants from the fetters of feudalism and which laid the foundation of the woollen trade. The establishment and expansion of towns, and the rise of a merchant class and of capitalist employers, were steps in a process of development the implications of which are still being worked out in the political as in the economic sphere.

The study of economic history, of the ways in which the community as a whole has sought to make a living, is but one aspect of the study of society as a whole. Political developments are inextricably bound up with economic and social developments generally. It is neither expedient nor desirable to separate the political history of trade unionism from its economic aspects. The philosophy which found its economic expression in mercantilism must be studied in relation to its political background and the general social life of the times. This "mercantile doctrine" is a philosophy—the desirability of building up a "favourable balance of trade" by increasing exports and restricting imports and making the foreigner pay for the difference—which is not dead to-day; in one form or another it is expounded from time to time by people who believe that it is possible to make the other man pay for what we want.

The study of economic history may not prevent us from falling into errors which have plagued our forefathers, any more than a study of psychology will prevent us from making fools of ourselves occasionally; but at least it gives us far less excuse for glorying in our ignorance. It is said that the realisation of ignorance is the beginning of wisdom; and it adds to our ability to deal with modern industrial problems if we realise, for example, that "scientific management" is not a recently invented tool which will serve as a magic talisman to solve our modern industrial troubles, but a handling of problems or organisation which was experimented with at least as long ago as the time of Robert Owen (1771-1858). There were "labour troubles" in the days of the Gilds. The local "squire" still exists in parts of England. The worker in a modern industrial town which did not exist until the Industrial Revolution threw it up may be handicapped by his very modernity in looking at modern industrial problems in the right way. He needs to get outside his own factory, his own town, his own industry, his own times, to see his own particular trade-union problem in its proper perspective.

On the other hand, a too academic approach is to be avoided. It may be that the philosopher, in comfortable circumstances of affluence, or sitting in safe seclusion in his University chair, away from the heat and toil of life, may succeed in "seeing things together", looking at things in their right proportion, achieving that attitude of scientific detachment which Plato regarded as the hall-mark of the truly educated man. It is equally possible that an academic thinker, obsessed with the idea of his own cleverness and hampered by a feeling of intellectual superiority to the rest of the human race, may lose the thread of truth while pursuing the labyrinthine mazes of the higher thought; the writer once heard a distinguished historian declare that there was no such thing as the Industrial Revolution—a view containing a germ of truth in that the Industrial Revolution was but the culmination of events which had their inevitable end in a plethora of inventions and the rapid reorganisation of the life of

Period.	Social and political background.	Economic features.
Prehistoric. <i>Old Stone Age</i> : very approx. 30,000 years ago. <i>New Stone Age</i> : very approx. 8,000 years ago.	Rudimentary social organisation. Cave life. Life poor and hard. Superstition and magic.	Hunting; fishing; collecting herbs and fruit. Old Stone Age "industries"—rough flint weapons. New Stone Age "industries"—polished stone weapons; pottery. Beginnings of agriculture.
Bronze Age : began in Britain about 4,000 years ago.	Bronze weapons; stone monuments. Stable communities. Hill forts. Hut dwellings in stone circles.	Metal-working. Flocks and herds. Domestic animals. Weaving, ornaments.
Iron Age : began in Britain about 2,500 years ago.	Lake and land dwellings; wattle-and-daub huts; thatched roofs. Iron weapons. Chariots. Druids.	Agriculture. Flocks and herds. Domestic animals. Weaving, ornaments.
Roman Occupation : 55 B.C.—A.D. 400.	Military camps. Roman houses; baths. Strong military rule. Road-building.	Some trade.
Dark Ages : A.D. 450–1066.	Political anarchy. Invasions. Saxon kings. Feudal system.	Saxon feudal and manorial system—self-sufficing agriculture. Some ship-building under Alfred.
Eleventh–sixteenth centuries.	Norman feudalism. "Middle Ages." Beginnings of Parliament (but not modern representative system).	Manorial system. Fairs. Markets. Merchant guilds (twelfth–fourteenth centuries). Craft guilds (fifteenth–sixteenth centuries). Growth of towns.

CHART I.—SOCIAL, POLITICAL AND

Period.	Social and political background.	Economic features.
The Tudors : 1500-1603.	Strong central government. Renaissance—revival of literature and the arts. Government "paternalism".	Economy mainly agricultural. Enclosures. Handicrafts. Ship-building. Merchants of the Staple. Regulated and chartered companies.
1603-1700.	Civil War, 1642-49. Bill of Rights, 1689. Constitutional monarchy established.	Enclosures. Expanding overseas trade. Bank of England founded, 1694.
1700-1800.	Rise of new middle classes. War of Spanish Succession, 1701-13. War of Austrian Succession, 1740-48. The Seven Years' War, 1756-63.	Britain becoming a great commercial nation. Domestic system of industry. Coal- and iron-mining. Pottery industry. Industrial Revolution.
1800-1900.	Napoleonic Wars, 1792-1815. 1832, First Reform Act. 1867, Second Reform Act. 1872, Secret Ballot. 1884, Third Reform Act. Great increase of population. Rise of large industrial towns. Popular education. Municipal reform.	Spread of Industrial Revolution. Inventions. Factory system. Trade Unionism. Free Trade, 1840-1914. Scientific management in agriculture. Combines in industry.
Twentieth century.	First World War, 1914-18. Rise of Labour Party. Second World War, 1939-45. Social legislation. Increasing interrelation of State and economic organisation.	Trade restrictions. Birth of international economic organisations. Beginnings of Atomic Age.

ECONOMIC DEVELOPMENT IN BRITAIN.

mankind, but surely sacrificing a sense of proportion to the effect gained by a picturesque exaggeration.

If it were possible for a writer to state the truth adequately in a book on industrial history or on any other subject, there would be no need for any more books to be written, once the truth had been stated in a standard work. But every age brings its own way of looking at life; readers look for new methods of presentation, of stimulation to thought, as well as for information on recent discoveries or more accurate assessment of facts. That is why to the writing of books there is no end, why even mathematics and philosophy have every year new books seeking to expound facts and principles afresh.

The student of modern economic and industrial organisation seeks a way of understanding his own place in the industrial scheme, of finding out how he and his colleagues and their body of ideas and practices fit in the story of the history of his country and his age. This is quite a legitimate aspiration, since the most important thing in this world is the individual person; the worker in industry is the most important fact in industry, just as the ordinary citizen is the most important fact in politics. All the learning and philosophising and studies of government and constitutions and economic theories fail if they obscure this vital fact. It is the fact behind all the search for a theory of democracy, the motif of the hundreds of years of struggle and bloodshed in our country's history.

It is to this task of trying to see the significance of our modern age in relation to the unfinished, continuing story of industrial life that we are to apply ourselves.

Industry may be defined as the group of processes by which economic goods are obtained from raw materials, comprising extractive, manufacturing and constructive activities. Sometimes agriculture is spoken of as an industry, sometimes the expression "agriculture and industry" is used. It is convenient to regard agriculture as an industry. It is important to have in mind when one uses the term "industry" a careful idea of the scope of the term; the "motor industry" comprises processes in which a number of different commodities are produced. The same comment may be made on the use

of the terms "textile industry" and "shipping industry". Here, as in everything else, common-sense usage will do no harm.

Since banking and financial activities, transport and distribution are intimately connected with industry, no survey of economic development could be adequate without a consideration of the part played by these services in the scene as a whole. Without them, industry could not begin to be organised.

CHAPTER II

THE MIDDLE AGES

I. The Beginnings of the Feudal System

THE story of the transformation of the economic life of the country really began in the late eighteenth century, but the seeds which were later to flower into the modern busy industrial scene were sown long before then. We can, indeed, go back to the Old Stone Age to find the beginnings of the division of labour, of specialisation. Archæologists speak of stone and horn and bone "industries"; in Norfolk, at Grimes Graves, there is the site of a prehistoric flint-implement "works", where the earliest miners toiled as long ago perhaps as 10,000 B.C., during the Middle Stone Age.

To gain some perspective of the course of history, we need go no further back for our purposes than the break-up of the Roman Empire, about the fifth century A.D., when the barbarians poured into the collapsing Empire. Civilisation in Europe was all but wiped out; learning, literature, culture nearly vanished; only in the monasteries was there kept alive a faint flickering light of learning and the practice of crafts other than those devoted to the stern necessities of war.

The break-up of the Roman power was followed by the division of Europe into a number of self-contained communities, each under the sway of a king or prince or lord. The Feudal System existed in England even before the Norman Conquest; but the Normans introduced a more definite political feudalism, a political system by which the king was regarded as the owner of all the land in his kingdom, parcelling out land to his followers, the nobles and barons, in return for their acknowledgment of him as their liege lord, the promise

of the provision of military service, and their services in helping to govern the kingdom. Great lords let out land to lesser lords on similar conditions.

This was the political structure of the feudal state. The economic aspect of it was the manorial system. The ultimate unit in the feudal structure was the manor. A great noble would hold many manors, and the lord of the manor would owe allegiance to him. The system was a useful and perhaps inevitable one in view of the troublous nature of the times; and after the Conquest Norman lords replaced Saxons in most manors. William wielded a heavier hand than did the Saxon kings; the Norman lords were perhaps of a fiercer kind than the Saxon; but there was no great revolution in the nature of work generally: the Feudal System in itself discouraged change.

2. The Feudal System and the Manorial System

It is because the Feudal System and its economic counterpart, the Manorial System, constitute a striking contrast to the expanding economy of the nineteenth century and to the spasmodic progress of the twentieth that it is profitable for the student of industry to consider them. They illustrated a policy of No Change. It was a policy which, politically, was designed to retain the power of the nobility and the king—and king and nobles often quarrelled with one another on the question of their respective rights. Economically, the system was designed to support the lord of the manor by the labour of the peasants, in return for which they obtained his sometimes doubtful protection.

The systems were complementary: the Feudal System had its economic effects, and the Manorial System had its political effects; when anything happened, such as the Black Death, which had far-reaching economic effects, there was an inevitable reaction in the political sphere.

The population of England at the time of the making of the Domesday Book, 1086, has been estimated to be about 1,800,000. Eighty per cent of the population consisted of

villeins, cottars (or bordars) and slaves; of these, nearly half were villeins. These classes were serfs, bound to the manor and unable to leave it without the lord's permission, except by becoming outlaws. The slaves became absorbed in time into the cottar class. The villeins and cottars had to perform *week-work*, *i.e.* agricultural work for the lord of the manor on two or three days a week, and work on *boon-days*, *i.e.* work whenever the lord of the manor might require it, though the number of boon-days was limited by the law, based on custom. These services were performed in return for the tenants' holdings, and the tenants also paid the lord a rent in money or kind or both. The cottars held less land than the villeins, and frequently had time to spare to work for the villeins—they became a kind of medieval agricultural labourer class.

The lord's land was called the *demesne*. Freemen and socmen, constituting about 12 per cent of the population, were not bound to the cultivation of the *demesne* as the villeins and cottars were. They later commuted what services they had to render into money payments. They could, if they wished, leave the manor. The distinction between freemen and socmen is not easy to draw.

The aim of Domesday Book was to survey the king's estate, *i.e.* his kingdom, so that William should know what his resources were, and how much more he could get out of them—in one sense he was a scientific manager, and certainly he was an able if ruthless administrator. He held a good many manors himself, and these were farmed by his bailiffs. The majority of the others were held by the Norman nobles, his *tenants-in-chief*. These tenants-in-chief sub-let such manors as they could not work themselves or leave in the hands of bailiffs to sub-tenants, *tenants in mesne*, who thus became lords of the manor; they included some English who had submitted to the Normans.

The government of the country was carried on by the services rendered to the king by his vassals; a great baron was usually appointed the sheriff, or king's representative in the shire, enforcing the king's rights, protecting his interests, being responsible for the collection of local revenues, for the

maintenance of order and the administration of justice, and seeing that the military service due to the king was provided. The king's domain lands were always greater than those of the nobles; and feudalism made it difficult for the baron to cut himself away from the royal power. The king's military power was superior to that of any likely combination against him. It was therefore a political system more definite and more rigid than that of the Saxons, and to that extent Norman feudalism was an innovation in England. As William bestowed confiscated estates on his followers, lay and clergy, he built up a strong system of royal power. His Great Council of barons and bishops attended as a duty they owed not to the "state" but to the king as the lord of his vassals.

The feudal system which was thus established in Europe between the eighth and eleventh centuries found its earliest and most complete expression in France. Its period of greatest flowering was from the eleventh to the end of the fourteenth century. Even to-day there remain survivals of feudalism in the laws and customs of many European countries.

3. The Manor as the Unit of Economic Organisation

England at the time of Domesday Book was a country of rural communities, the richest and most cultivated parts being in the south-east. The manors were self-sufficing communities; roads were bad, and the forests were infested with outlaws scarcely less savage than wild beasts. It is doubtful whether a serf would wish to stray; he had security, with no fear of unemployment, and it was not in the interests of his lord to be excessively tyrannous. Noble and non-noble recognised the claims of custom, that raw material of laws; William I had promised that the English should keep their customs, and he kept his word.

It is not surprising, therefore, that after the disorder and violence that followed the break-up of the Roman Empire, the feudal system and the manorial system, with their promise of security and a settled way of life, should have lasted through so many centuries.

Conditions varied throughout the country, and it is now known that they were by no means so uniform as had previously been thought; but, in general, the organisation of the manor as an economic unit, a way of making a living, could be described in the following way. The organisation of production in the medieval manor provides the student of industry with an example of a type of organisation followed in a practically "closed" economy, one in which there was little dealing with outside markets; production was for the little community of the manor, and all concerned had their relations with other members defined by custom. Custom dictated the times of sowing, of enclosing the land to grow cereals, of opening the land for common grazing. The custom was declared by the steward, the lord's representative, who presided over the manorial court.

The day-to-day management of the manor was entrusted to the bailiff; he directed the labour of the villeins, who were represented by an elected reeve—there is a parallel, if not a very close one, with the general-manager-shop-steward relationship of a modern business undertaking!

The land was divided into pasture and arable, and there were common rights over grazing. In general—though once again it must be stated that conditions and details of organisation varied throughout the country—the arable land was divided into two or three large open fields. The holdings of the tenants were distributed amongst these fields, so that the good and bad land was evenly divided out—a medieval policy of fair shares for all. A system of rotation of crops was practised; *e.g.* in the three-field system, Field A would grow wheat during the first year, Field B barley and Field C would lie fallow. During the second year Field B would lie fallow, Field A would grow barley and Field C would grow wheat. During the third year, Field A would lie fallow, Field B would grow wheat and Field C barley. In the two-field system one half of the land would be cultivated and the other half allowed to lie fallow, each half being cultivated in alternate years.

It was a system wasteful of land, and production did not reach a high degree of efficiency. Winter feeding of livestock

by root crops was not known, so that most of the cattle were killed off and salted down on the approach of winter. Bread was produced from the wheat; malt and ale were brewed from the barley; the wool from the sheep was spun into yarn in the cottages and the yarn woven into a kind of rough cloth; the hides of the cattle were made into leather.

From the modern viewpoint, farming on the manor was of a somewhat rough-and-ready nature. The tenants' holdings were in strips separated from one another by strips of unworked grass and turf and weeds which it was apparently nobody's business to keep down. There was no attempt made to improve the breeds of cattle. Large numbers of swine and poultry were kept, and pork and poultry-meat no doubt kept the tenant sometimes better fed than were unskilled workers of the nineteenth century.

Before the middle of the fourteenth century there was a considerable export of wool to the Continent. The Black Death of 1348-49 intensified the process of enclosing land for sheep-farming, and woollen manufactures later replaced raw wool as the principal commodity in the export trade.

4. Towns, Fairs and Merchants

The system was not entirely self-sufficing and closed. Human nature is dynamic; and processes were at work tending to destroy the manorial system even before it reached its full flower. The very limitations of the manorial system encouraged the growth of forces springing up to counter these limitations. Such commodities as muslins, laces, ribbons, needles and thread, nails, and weapons were obtained from markets and fairs and from the towns which were beginning to spring up near river fords and the meeting-places of trade routes. The village surplus might be disposed of in the neighbouring town to pay for the articles which the village could not make itself.

Thus money, unnecessary in a completely self-sufficing agricultural economy, came into use. This was an influence contributing to the decay of the manorial system. By the

fourteenth century, it would seem that it was becoming common for peasants to commute their services for money payments. Men purchased their freedom for money; towns purchased rights from the lords, who, as they practised what were almost their sole accomplishments in the wars and crusades, and as they indulged in the expensive tastes acquired through their coming into contact with the luxuries and refinements of foreign countries, wanted more and more of this useful commodity.

The towns had sprung up at trade junctions, near cathedrals and monasteries, at river fords or at specially fortified places. About eighty towns are mentioned in Domesday Book; in 1377 about forty of them had a population of over a thousand. In the Middle Ages a few towns had populations of 5,000–10,000; London's has been estimated to have been about 25,000–30,000. York and Bristol were the only other places with populations greater than 10,000.

The towns were at first entirely under the jurisdiction of the king and the nobles; but the perennial desire of the nobility for money induced them to grant charters giving the townspeople freedom to manage their own affairs. The ecclesiastical barons showed more sagacity and determination than the lay nobility in holding on to their rights, whether in relation to agricultural matters or to towns.

Towns bought the right to pay a fixed sum to the Crown in place of a number of taxes of various kinds; they chose their own mayors. A town would set up a borough court to deal with the general conduct of its affairs and with its legal business. A town would set up its own markets, though this profitable type of business—for the merchants paid tolls and charges—was often retained by the Crown, the Church or a baron.

Fairs were also held, many important ones annually, for the buying and selling of particular commodities, such as wool and horses. On the Continent certain fairs, such as the book fair at Leipzig, were of considerable importance right up to the outbreak of the Second World War; but most English fairs have degenerated into the "fun fair" type.

In modern times trade exhibitions such as motor exhibitions have had a considerable influence in bringing together buyers and sellers of specialised commodities. Corresponding more to the medieval general fairs is the British Industries Fair, organised annually for the encouragement of British trade. The fair was first held in 1915, when war-time conditions caused difficulty to British traders in obtaining imports from foreign countries; the fair demonstrated that many of the products required could be obtained from the various parts of the Empire. It was formerly in two sections; the London section was organised by the Department of Overseas Trade of the Board of Trade and devoted to the "lighter" trades, such as pottery, toys, furniture and stationery; the Birmingham section was organised by the Birmingham Chamber of Commerce and concerned with such "heavy" industries as hardware and machinery. The number of foreign and Commonwealth buyers has increased in succeeding years. It was announced in 1954 that Government control of the British Industries Fair was to cease, and that the management of the fair was to be reorganised as a limited company.

In the Middle Ages fair officers had authority over the maintenance of order and the conduct of business transactions. Usages and customs relating to the conduct of business transactions, derived partly from the Roman law and partly from the practices of foreign markets, were developed—the "Law Merchant". There sprang up for the immediate settlement of disputes "Piepowder Courts", so called from the dusty feet (*pieds poudrés*) of the merchants who attended them, often from far away. These courts were not regarded with any great favour by the professional lawyers. The usages relating to British and foreign traders were declared and administered in the Courts of the Staple set up in certain foreign towns. In the reign of James I some of the usages of merchants were recognised as common law, but it was Lord Chief Justice Mansfield (1705-93) who by his labours caused the law merchant to be incorporated into the general body of the Common Law of England. Later, some of these usages formed the basis of statutes: the Sale of Goods Act, 1893, and the

Bills of Exchange Act, 1882, in effect codified as Statute Law these long-established practices and usages.

Even in the Middle Ages, then, the merchant was coming to be a member of a new class in the English social scene.

5. The Gilds

By the twelfth century the merchants were establishing in most English towns associations for the promotion of their particular trades. These associations, the merchant gilds, imposed a "just price" and insisted on fair trading practices, and extended their interests to religious and "friendly society" activities. In general, it may be said that members of the gild enjoyed the right to trade within the town without paying the tolls exacted from strangers. They were expected to deal fairly and honourably, to exact no more than a reasonable profit, to settle their debts. Enforcement of such requirements was made possible by the organisation of the gild, headed by an alderman and assisted by wardens and a council, and by the gild court. Such privileges as the gild enjoyed were granted by the Crown or by the lord of the manor.

Though it is generally stated that the ancient gilds cannot be compared with the modern trade unions, it does seem that they had points in common with union practice, as well as with the practice of modern masonic associations. It is true that the gilds were associations of masters, not of "operatives"; that the wealthy merchants would become not only officers of their association, but would also be likely to take office as burgesses managing the affairs of the town as a whole. Differences between the modern trade union and the gild are easy to see; nevertheless, these associations are not entirely dissimilar.

Perhaps the greatest contrast between the trade union and the gild is seen in the associations of craftsmen called the craft gilds, whose organisation, with the system of council and wardens, was similar to that of the merchant gilds. A somewhat later development than the merchant gilds, craft gilds arose as the division of labour in the towns resulted in the

coming into being of craftsmen skilled in particular handicrafts. Some guilds were chartered by the Crown; others were under the control of the town authorities. They maintained standards of quality and workmanship, even punishing offenders for bad workmanship or sharp practices, ensuring a fair deal and a "just price" for their products.

Within the craft there were grades of workmen: master-craftsmen, journeymen and apprentices. Journeymen were qualified workmen working in a master's workshop for wages (*journée* = day). Apprentices were young men engaged in learning the craft; an apprentice usually spent a few years as a journeyman when he had completed his training, and hoped to set himself up as a master eventually, by hard work and attention to his craft—helped perhaps, in some cases, by the expedient of marrying the master's daughter. There is a tradition that, conforming to the fashion of violence in the Middle Ages, apprentices would engage in rough games or pitched battles in the streets, using clubs and staves as weapons.

Master craftsmen were independent producers, working with their own tools and using their own capital. By the fourteenth century the craft guilds were sufficiently powerful to supplant the merchant guilds. They grew to be as monopolistic and exclusive as the merchant guilds; and journeymen realised that many among their ranks would never rise to the status of masters. They therefore formed associations of their own to get as high wages and as good conditions of work as they could. To this extent the associations of journeymen were the forerunners of the modern trade unions—at least of the skilled unions.

As for the masters, they grew more and more despotic and narrow; the guilds became ever more monopolistic and self-seeking, and adopted "liveries" which could be worn only by the wealthiest and most powerful members: the modern "livery" companies are descended from them. It was thus that they came to hinder the development of industry and commerce rather than help it. Industry grew in the new towns, where there were no guild restrictions; craftsmen

settled outside the confining walls of the town. They lost a considerable amount of property in the Tudor period, the blossoming "State" seizing it on religious pretexts; and the developing nationalism of the period caused their regulation to pass into the hands of the State.

As was the case with the manorial system, the guild system strangled itself with its own restrictions. It may be argued that a modern parallel exists internationally in the trade restrictions and barriers which have confused and confounded the world in the inter-war and post-1945 period—restrictions which such organisations of international machinery as the General Agreement on Tariffs and Trade, the European Common Market, and the European Free Trade Association have been set up to unravel.

6. The Widening of Horizons

Rural activity during the Middle Ages comprised not merely agriculture, but also the weaving of wool in the cottages. Wool weaving in the towns grew to such an extent that by the thirteenth century England was exporting woollen cloth. At the close of the century there was a decline which was arrested by the immigration of Flemish weavers, some of whom became so substantial that they were able to employ workmen; and by the sixteenth century the woollen industry, now England's staple industry, was in the hands of capitalist employers: they purchased or grew their own wool and paid workers to weave it into cloth in the weavers' own homes. So it was that "capitalism" and the "domestic system" arrived.

In the meantime important things had been happening to agriculture. In the fourteenth century, in 1348-49, the Black Death hastened the decay of the manorial system and shattered the economic basis of the feudal system by sweeping away from a third to a half of the population of England. Labour became scarce; and the peasants responded to economic forces by disregarding the injunctions of the Government and moving to places where they could obtain the highest reward for their services. By so doing, they lost many rights and

privileges, such as rights of common pasture and waste; and the era of the landless labourer had fairly begun. The lords went over to sheep-farming, enclosing the peasants' holdings. By the end of the fifteenth century villeinage had practically ceased to exist. Open-field cultivation continued to be practised for some time yet—and, in fact, it was carried on in a remote village or two until quite recent times; but the old manorial system was dead. A money economy had replaced the old barter-in-kind economy; subsistence activity had given place to the profit-motivated economy.

So far as dates are of any significance, the Battle of Bosworth Field in 1485 marked the end of the true Middle Ages, with their quasi-romantic chivalry, their violent, mail-clad barons, their frowning castles—whose defences were soon to crumble against the blast of gunpowder. For well-written fiction, based upon years of historical research, giving a picture of life in the Middle Ages, the reader may go to Sir Arthur Conan Doyle's *Sir Nigel* and *The White Company*.

In England a strong dynasty of sovereigns, the Tudors, with statesmanship and tact, aided by Welsh sagacity and guile, held the baronage in leash—in any case, the old families had fairly successfully striven to wipe one another out during the Wars of the Roses. The policy of the Tudors—aided by the desire of the ordinary man, who was sick of the nobles' paralysing wars, for a strong government—had a unifying influence on the country and developed the growing spirit of nationalism, so that a man would be proud to call himself an Englishman rather than a Kentish-man or a Leicestershire-man. The Crown regulated commerce, at first by currency regulations and then by the establishment of uniformity in weights and measures. Mercantilism was born: the doctrine that a nation's wealth was increased by restricting imports but expanding exports and building up a "favourable balance of trade". It was nationalism running wild in the economic sphere—but economic thinking was somewhat elementary then; and, besides, there was need to arm by whatever manner men could against the might of Spain.

It was in Elizabeth's reign particularly that the Privy

Council exercised an important influence on the economic life of the country: its influence was, indeed, an economic aspect of the growing spirit of nationalism, itself a by-product of the Renaissance.

Under the guidance of Lord Burleigh industry was protected; cloth-making came completely under the control of the home manufacturers, who were freed from their dependence on foreigners for the finishing processes, and were able to compete with the Flanders merchants in the markets of Europe. Burleigh granted monopolies and patents to those who introduced new processes *; and encouraged the Protestant refugees whose skill proved invaluable in the woollen industry, in glass manufacture and in the manufacture of needles and cutlery. During the sixteenth century industrial progress was rapid.

To protect the country against the threat of Spanish power, Burleigh encouraged the shipping industry, directly by encouraging shipbuilders and indirectly by encouraging the fishing industry, and undertook the maintenance of the supply of timber and of hemp and naval stores.

By the end of the reign of Elizabeth the privileges of the foreign traders in England were at an end; as will be told in the next chapter, the German merchants of the Hanseatic League lost their privileges in 1578.

In the realm of currency Sir Thomas Gresham, Elizabeth's finance minister, was entrusted with the task of putting on a sound basis again the currency, debased by Henry VIII. It is to him that Gresham's Law ("Bad money drives out good money") is attributed.

Colonial development was hardly a strong feature of the Elizabethan era; but chartered companies (also considered in more detail in the next chapter) were encouraged. It may be said that the "Elizabethan Age" was one in which the economic foundations of England's subsequent expansion into a great commercial and trading power were firmly established. Mercantilist policy was not actively pursued during the reign: it was not until the time of the Common-

* A List of such Patents and Monopolies is quoted in Reference 2 in the Bibliography, p. 181.

wealth, in 1651, that the first effective Navigation Act was brought into operation.

The Renaissance, the rebirth of learning, seems to have been the spiritual result of the loosening of the shackles of the feudal system. The torch of spiritual things, which had flickered so feebly during the Dark Ages of strife and violence and the Medieval Age of knighthood and chivalry and bloodshed, began to glow brightly, and soon burst into a flame that was to illuminate not merely the pages of manuscripts, but the souls of men. It quickened the mind and the spirit; it set men's souls questing in a reformation that shook the religious world to its foundations; and it sent their minds and their bodies over the seas in the search for high adventure—and for the riches of exploitation.

By the fifteenth century the Venetians and the Genoese had assumed mastery of the trade routes in the Mediterranean; the trade with North Europe and Russia was mainly in the hands of the merchants of the Hanseatic League, a powerful body of merchants of German and Scandinavian towns. In England the Merchants of the Staple, dealing in the staple commodities, wool, hides, leather, tin and lead, formed an export association as early as the latter part of the Middle Ages. The export of cloth was the special concern of another type of association, the Merchant Adventurers, the members of which carried on trade individually or in partnership.

The trading routes to the Orient were through the Levant and Mesopotamia and down the Persian Gulf to India. The contact with customs and commodities different from their own widened the mental horizons of the merchants as the Crusades had widened the ideas of the knights; there was spice for the mind and there was spice for the body in such wanderings.

In 1453 Constantinople, the last outpost of European power in the East, fell to the invading Turks; and trade with the East was severely interrupted. Already the Portuguese has been speculating about distances and exploring ways and means of getting to India by going round the coast of Africa; in the fourteenth and fifteenth centuries they visited the

Canary Isles, Madeira and the Azores. In 1487 Diaz rounded the Cape of Good Hope; and in 1497-98 Vasco da Gama sailed round the Cape to India.

It was the end of an age; these developments were rapidly shaping a new economic and political and social structure. Not that one can put one's finger on any year and say, "This was the end of the Middle Ages." The stream of life flows on, and the terms used by historians are merely conveniences to enable them to try to grasp the significance of a term of years; the expression "Middle Ages" is a somewhat misleading and indeed peculiar one—what were they the middle of?

For convenience's sake, enabling us to try to see things in proportion, one can say, then, "The 'Middle Ages' were over; this is the beginning of a new era in human affairs." But, indeed, it is like ending a chapter of an exciting book in the middle of pressing events in order to draw away for a space to see those events in relation to the broad stream of what has gone before.

CHAPTER III

THE BEGINNINGS OF THE MODERN WORLD

I. The Great Geographical Discoveries

THOUGH one age moves into another not in jumps, but by a process often slow and not readily recognised at the time, one can discern the pattern of the new age after the change has taken place. The "Middle Ages" were gone; Henry VII, though seemingly a medieval king, was the first of the moderns—he was very far from the gallant, swashbuckling kings who had preceded him. The mailed knight had gone; politically, the birth of the modern English constitution was taking place.

And in the world beyond our shores events were taking place which were directly leading to the shaping of Britain as a "world power". We have told how the ships of Europe were sailing the world seas, confined no longer to the practically land-surrounded Mediterranean. Christopher Columbus was trying to find practical support for his idea of reaching the East by sailing westwards; in 1492, his little expedition of eighty-eight men, his trio of tiny ships—the famous *Santa Maria* was only of 100 tons burthen—sailed into unknown seas. A little over two months later Columbus, bearing the royal banner of Spain, landed on what he thought was the coast of India: the islands he discovered were the West Indies, off the shores of the New World. To the day of his death, he was ignorant of the fact that he had brought into the horizon of the people of Western Civilisation a world which may, indeed, have been first discovered by the Northmen of old, but which had been forgotten by the West for centuries.

His success inspired the Portuguese to new efforts; in 1497

Vasco da Gama sailed to India. In 1519 Magellan, a Portuguese in the employment of Spain, passed through the straits which bear his name, sailed across the Pacific Ocean and discovered the Philippines.

So the ships of Spain sailed across to the New World; their captains plundered and destroyed the ancient civilisations of the Aztecs and the Incas in Mexico and Peru, bringing back the gold and silver of Central and South America that enabled Spain to take a dominating but temporary position among the nations of Europe.

In the path of conquest, but as trading nations rather than military powers, came the English, the French and the Dutch. Trading companies seeking monopoly in particular areas came into conflict in India and North America, and economic and political motives were mixed in the wars the European nations waged for power in the New World. Famous trading companies like the East India Company, which received its original charter from Queen Elizabeth I in 1600, were granted charters by the Crown to exploit the resources of the territories they had marked out.

2. The Trading Companies

The companies which the growing, powerful class of merchants formed as instruments in their economic activities were of two types, regulated and joint-stock. *Regulated* companies, of which the greatest was the Merchant Adventurers, were associations of merchants who carried out ventures singly or in partnership, the company as a whole possessing a charter to carry on a specified trade. *Joint-stock* companies were associations in which the business was carried on by the company as a whole, the capital being contributed by shareholders amongst whom the profits were divided.

Companies like the East India Company were granted charters which gave them the monopoly of trade in a certain area. Canada, India, Africa, the great areas "ripe for development", were divided out and quarrelled over and fought over by the nations. Such colonies as were founded

were regarded by the statesmen of the time merely as exploitation areas providing raw materials and new products for the "mother country", and markets for her own goods.

The Mercantilist doctrine had full play, and foreign trade was so regulated as to obtain the greatest advantage to the nation: the most favourable "balance of trade" and the maximum inflow of precious metals. Navigation Laws were made by the British; these regulations brought them into conflict with the Dutch, who were becoming the western world's sea-carriers, and who objected to the Navigation Act of 1651, which laid it down that goods imported into England from Asia, Africa or America or the plantations should be carried in English or plantation ships, *i.e.* ships in which the owner, master and the majority of the crew were British; goods from European countries could be brought into England or the colonies only in English ships or in ships of the country of origin. Only English vessels could import certain fish, and foreign vessels were not to engage in the English coasting trade.

The 1660 Navigation Act, amended and added to by various subsequent provisions, laid down the basis of the subsequent regulation of British shipping. During the latter part of the seventeenth century, and throughout the eighteenth century, the volume of English tonnage increased; and it has been argued on the one side that this increase was due to the Navigation Acts, and on the other side that it would have occurred in spite of them. We cannot enter into this controversy here; but it may be noted that the Baltic trade, at least, was adversely affected, since British ships were not built for the Baltic trade.

Certainly in the case of the American colonies, the mercantilist policy had disastrous results. It has been mentioned that the colonies were regarded as places whence England could obtain raw materials and products she could not produce herself and to which she could export finished goods. Under these circumstances regulation of the colonial trade in the interests of the "mother country" was considered right and proper—and this regulation in many cases worked to the

advantage of the settlers: in tobacco, for example, the colonial enjoyed protection against English competition, and had an assured market with a guaranteed fair price for his goods. But this "old colonial system" proved increasingly irritating to the expanding colonies, which had built their own ships and wanted to use them as they wished. The restrictions irritated foreign countries, too, and they adopted retaliatory methods of dealing with them. In fact, the early nineteenth century saw the rise of a vigorous free-trade movement, as the principles set out in Adam Smith's *Wealth of Nations* (1776) gained increasing practical support. The Navigation Acts were repealed in 1849 almost entirely; the last remnant of restriction, that relating to the coasting trade, followed in 1854. But by that time the damage, as far as America was concerned, had been done.

3. The Pattern of Expanding Trade

Because the Industrial Revolution grew out of the wealth of the country, and, indeed, was a natural consequence of the commercial revolution that preceded it, it is necessary to look at the pattern of the expanding trade which brought this wealth.

In the Middle Ages the most important commodity was wool. In the reign of Henry III the *staple* was established; this was a market for the overseas trade in the staple commodities wool, hides, leather, and tin and lead. The place was changed at various times. From 1399 until its loss in 1558, Calais was the staple. The English merchants who exported the staple commodities were called the Merchants of the Staple. The Merchants of the Staple came into conflict in the fifteenth century with the Merchant Adventurers, who exported woollen cloth; the latter thus became the rivals of the Merchants of the Staple, who had the right to export wool, which they contended included woollen cloth. In point of fact, the export of wool was declining in favour of woollen cloth.

The Merchant Adventurers also came into conflict with the Hanse merchants, who were German merchants of the Han-

seatic League trading in woollen cloth, herrings, furs and tar, and whose London depot was the Steelyard. This struggle ended in 1578, when the Hanse merchants lost their privileges; the Steelyard was closed in 1598.

A certain amount of cloth was exported from England in the thirteenth century. Flemish weavers fleeing from disturbances in the Netherlands were invited by Edward III to settle in England; and their skill helped to develop the woollen and worsted industries of the country. Some of the Flemings were men of means able to employ workmen; and the industry as a whole gradually became capitalistic; by the fifteenth century it was entirely in the hands of capitalists who supplied the raw material and collected the finished article from workers manufacturing the cloth in their own homes. This was the "domestic system": the system whereby manufacture was carried on in their homes by people as an activity supplementary to agriculture. It must be remembered that right up to the middle of the eighteenth century England was predominantly an agricultural country.

The increasing prosperity of the woollen-cloth trade induced the landlords to enclose lands; and they ejected tenants with little regard to their rights. The hardships thus engendered received the attention of Parliament; and proclamations and statutes in the Tudor period attempted to stem the evils, with little avail: the enclosure movement continued until the end of the sixteenth century.

By the consolidation of the scattered strips and consequent improvements in the methods of farming, some advantages were derived from the enclosure movement; but farming throughout the country was still mainly arable, and open-field cultivation continued on a large scale until late in the seventeenth century. Not until the agrarian revolution of the eighteenth century, when enclosures began again, this time by Act of Parliament and for the purpose of supplying the growing industrial towns with food, were methods in agriculture revolutionised.

The enclosures of the Tudor period took place to supply the woollen industry with raw material; by the end of the

seventeenth century about two-thirds of English exports consisted of woollen fabrics. Because of the demands of the home market, the export of wool declined as manufacture grew.

The great port of the sixteenth century was Antwerp, to which England sent for distribution wool, lead, tin, leather and provisions, receiving bullion, precious stones, spices, sugar, cotton, glass, salt, fish and other commodities. But at the end of the sixteenth century Antwerp's position as the entrepôt of Europe passed to London, whose rise was aided by the efforts and skill of the Protestant refugees.

The great discoveries in the East and the New World, and the formation of the trading companies, heralded the rise of Britain as the foremost commercial nation in the world. The greatest of the trading companies was the East India Company. Its forerunners, the Eastland Company and the Turkey Company, failed to fulfil their early promise. The Eastland Company was formed in 1579 to try to secure the Baltic trade carried on by the Hanseatic League. It exported cloth and imported tar, hemp, cordage and naval stores; but the Government came to rely more on the American colonies for naval stores. The Turkey Company was formed in 1581 to deal in the Eastern Mediterranean trade; in 1592 it was merged into a new company, the Levant Company. It suffered from the competition of the Muscovy Company (which for a time monopolised the trade with Russia), and of the East India Company, both of which were engaged in the Persian silk trade.

The East India Company was founded in 1600, becoming at first a company in which joint-stock activity was practised for each voyage and then raising a permanent joint-stock capital in 1657. Initially it tried to build up trade with the Spice Islands in spices, silks, indigo and calico, imports from India much in demand there. The Dutch frustrated this aim; and in consequence the Company turned its attention to the west coast of India. The story of its expansion, its taking on the functions of government and the conflict with the French, is well known. Trade may normally follow the flag, but it

would appear that in the case of the East India Company the flag followed trade.

The story was paralleled in Canada. In 1670 Charles II granted a Royal Charter to a group of courtiers and magnates, giving them a monopoly of trade in the lands around the Hudson Bay. The Hudson Bay Company engaged in the fur trade, and from 1690 its young traders explored the interior. Its lands were invaded by the French, who, however, were finally defeated in the political struggle that followed. The company remained in sole control of the huge Canadian area from 1821 until 1869, when it surrendered its monopoly. It now has a retail, wholesale and multiple-store organisation as well as a great fur-trading business. The towns of Western and Central Canada grew up around the company's trading posts. The companies were not merely extending the scope and value of trade; they were opening up continents for exploitation.

Such activities could not help but bring riches to the men who financed and directed them. Public interest in trade and in the profits to be obtained from it grew rapidly in the peace which followed the Treaty of Utrecht (1713), the treaty which concluded the war of the Spanish Succession. Companies were formed to engage in what their members hoped would be profitable enterprises, though some were started by the ignorant and enthusiastic and some by the adventurer type always thrown up by circumstances giving the opportunity to fleece the foolish. One of the most popular companies was the South Sea Company, which was chartered in 1711, and which was granted a monopoly of trade with South America south of the Orinoco in return for loans made to the Government. It gained the right of supplying negro slaves to Spanish colonies for thirty years; but, this being found less profitable than was expected, it sought to extend its activities, and offered to take over the National Debt in exchange for the monopoly of all extra-European trade. This offer was accepted by the Government, and it seemed to speculators that all their dreams were about to come true. Hundreds of new companies were started, many with the most fantastic objects

such as for making salt water fresh, or with no definite objects stated at all. Ruin for many people was inevitable, and the South Sea "Bubble" was pricked. The South Sea Company itself went back to its former activities; the "Bubble Act" of 1720 required new companies to obtain a charter from the Crown or to be formed under a special Act of Parliament.

It is evident that there was at that time a fund of money waiting for investment.

4. Banking and Credit

The development of trade necessitated the introduction of a system of banking and finance. The concentration of the noble classes on fighting, and the preoccupation of the lower classes with the tilling of the soil, had left the work of money-dealing in the hands of the Jews; and for several hundred years before the thirteenth century they were the money-lenders and money-changers of Europe. Usury, the lending out of money for interest, was forbidden by the Christian Church. Towards the end of the thirteenth century, Lombards arrived from Northern Italy; they defied the law about money-lending, and were expelled in the reign of Elizabeth I.

As commerce expanded, merchants built up not only a body of customs relating to the legal aspects of their business, but evolved an instrument by which national and international debts could be settled without the sending of bullion—an instrument, moreover, which could serve as a basis of credit. This was the bill of exchange, by which a debtor trader agreed in writing that he would pay another trader, or anybody else to his order, a certain sum at a fixed future time. The creditor trader could settle *his* debt to a third trader by endorsing the bill in the third trader's favour. The bill could thus be passed from hand to hand, the last holder presenting it for payment to the original debtor trader at the end of the stipulated time.

Certainly the efficacy of such an instrument depended on the credit of the original debtor and on the credit of those who

passed on the bill; in practice, the level of integrity of merchants generally was such that the bill of exchange came, by the sixteenth and seventeenth centuries, to be used extensively in national and international trade.

A great advantage of the bill of exchange, and one that contributed to the spread of commerce and the production of commodities, was that the money for raw materials could be borrowed on the strength of the credit of a merchant, who would arrange to pay after the customer had received the finished commodity. Thus trade, *e.g.* the woollen trade, was financed, and the widening market was able to bear the fact that producer and consumer were often far from one another.

Farmers and manufacturers were able to obtain finance from goldsmiths, clothiers, landlords and other people, who thus engaged in the art of money-lending.

Actual money and bullion was entrusted to scriveners (or financiers) and goldsmiths; the troubles of the Civil War caused merchants to resort more and more to goldsmiths, who had facilities for safeguarding valuables and who issued receipts for the money. Such receipts would be passed from hand to hand, obviating the transference of actual metal, and they became in effect the first bank-notes. Moreover, a client might make an order requiring the goldsmith to pay somebody else a certain sum: this was the beginning of the cheque system. But the cheque did not find favour as an instrument of payment until the nineteenth century, with the rise of the joint-stock banks. The goldsmiths became deposit bankers, lending money on the security of bills of exchange, and lending money also to the Government.

This latter activity involved them in considerable difficulties when the Dutch war depleted the exchequer of the Government. William III obtained a loan of £1,200,000 from business men by agreeing to a plan whereby, in return for the loan, a "Bank of England" should receive 8 per cent and the privilege of becoming the Government's bank, as well as the privilege of issuing notes to the extent of the loan. The Bank of England was incorporated by Royal Charter in 1694. It met with opposition from the goldsmiths and private bankers, who

feared its rivalry; but a bank backed by the Government could not fail to meet such opposition adequately.

In 1708 an Act was passed prohibiting any other chartered bank or partnership consisting of more than six persons from issuing bank-notes. Such importance was attached to this function of note-issuing that for 100 years no other joint-stock banks were established in England, though neither private banks nor joint-stock banks were prohibited. Most banking business was carried on in London; before 1750 there were few banking houses in the provinces, though a good deal of bill discounting (*i.e.* the buying of bills of exchange at a discount) was carried on by shopkeepers and importers. Some merchants, indeed, found bill discounting so profitable that they eventually discarded their merchanting activities and became well-known discounting houses and acceptance houses (*i.e.* they "accepted" bills of exchange for their clients, making themselves liable to pay—for, of course, a suitable return, and on security).

Thus there was being built up a banking and financial machinery which was to be of especial value when an expanding industry was seeking the means to finance itself and to conduct the multifarious banking transactions which became necessary.

5. The Eve of the Industrial Revolution

It has become clear why Britain was so well equipped to take her place as the leading industrial nation. Politically, the country was united under a strong government. Her merchants had built up contacts all over the world. Her geography, her climate, were of the type to stimulate the manufacture and export of the cotton that was to become king in the new kind of world to follow; her resources in coal and iron were waiting for exploitation. Capital had been built up by her foreign trade, and her banking and credit and financial machinery had been developed to a point from which further progress could spring. Circumstances, natural resources, and native energy had made possible a commercial

revolution which was the necessary prelude to the Industrial Revolution.

Yet there was no sudden change—at least, on the scale of human life there was no sudden and violent upheaval. It is only when one steps back to survey the long years of quiet,

Period.	Political background.	Economic background.	Commercial and industrial organisation.
Eighteenth Century.	Overseas expansion. Wars with French in Canada and India. Navigation Acts. American Declaration of Independence, 1776. British House of Commons unreformed.	Britain a great commercial nation. Inventions from 1733 (Kay's flying shuttle).	Domestic system in industry. Second Enclosure Movement in agriculture; from 1750: application of scientific methods. Combination Laws, 1799-1800.
Nineteenth Century (to 1914).	Reform Acts, 1832, 1867, 1884. Chartist Movement, 1838-48. Growth of large towns. <i>Laissez-faire</i> attitude of Government. 1833: First effective Factory Act. Relief of Poor: "Speenhamland" System, 1795-1834. From 1870: Development of British Empire as a world power. 1911: Beginnings of social legislation. FIRST WORLD WAR, 1914-18.	Spread of Industrial Revolution; Inventions. Rise of Co-operative Movement (1844: "Rochdale Equitable Pioneers"). Transport: Roads, Canals. Railways (after 1840); steamships (after 1860). Suez Canal, 1869. Free Trade, 1840-1914. Refrigeration, 1882. <i>Trade Unionism</i> : Repeal of Combination Laws, 1824. 1834: Grand Consolidated National Trades Union. 1850s: "New Model" Unionism. 1880s: "New" Unionism.	Building up of Britain's basic industries; development of private capitalism. <i>Co-operative Movement</i> : Retail distribution and wholesale distribution. <i>Limited Liability</i> , 1858-62. <i>Factory System</i> . <i>Combines</i> : Cartels, Trusts. International agreements. <i>Banking</i> : Private banks. 1844: Bank Charter Act. 1868: Limited liability applied to banking; great impetus given to joint-stock banks. <i>Agriculture</i> : Repeal of Corn Laws, 1846. 1840-70: Prosperity. 1870-1914: Depression.

CHART 2.—CONSPECTUS OF THE EIGHTEENTH AND NINETEENTH CENTURIES IN BRITAIN.

traditional agriculture, of domestic resources supplemented by manufacture within the home, and contrasts them with the period of smoking, humming industry of sixty years later that one realises how quickly the country jumped into modern times.

By the latter half of the eighteenth century England had become a great commercial nation. The most important

industry was the manufacture of woollen cloth. In some parts of the country the head of the household was the proprietor of his business: he bought the raw material, worked it up with the aid of members of his family or with the help of journeymen, and sold it. He was not yet divorced from the soil. This was the true domestic system. But in other parts of the country, the handling of the raw materials and finished articles, apart from manufacture, was in the hands of dealers or clothiers, the first of the army of capitalists.

Cotton manufacture was quite unimportant in the early part of the eighteenth century, but it increased in the Lancashire district. Pottery flourished in Staffordshire, hardware in Warwickshire. Coal- and iron-mining were being developed in the north—these were industries which were necessarily capitalistic from the beginning. Birmingham, Sheffield, Manchester, Liverpool, increased their populations. From the five millions of Elizabeth I's time, the population had increased by 1750 to about $6\frac{1}{2}$ millions: increased wealth in the country as a whole, better living conditions for people generally, enabled people to support children more adequately than before.

But the country was still mainly agricultural. About a third of the working-class population consisted of agricultural labourers; the industrial classes were slightly less in numbers. Only about a fifth of the population was concentrated in towns; outside London, only Bristol, engaged in shipbuilding and the American trade, and Norwich, the centre of the Norfolk woollen-manufacturing industry, had over 50,000 in 1700. But Birmingham, Liverpool and Hull were increasing their manufacture and shipbuilding; Leeds had become the centre of the West Riding woollen industry. Iron was being smelted in Sussex and the Forest of Dean; Sheffield was developing her manufacture of cutlery.

The change was beginning; and when it came it continued rapidly. Soon the face of Britain was to be transformed; new social, economic and technical problems were to arise, carrying with the attempts to solve them political implications that were to interact with them and make indeed a new kind of world for the British people.

CHAPTER IV

THE INDUSTRIAL REVOLUTION: I. THE REVOLUTION IN MANUFACTURE

I. The Revolution in Textiles

THE great change, when it came, was heralded by a spate of inventions in the textile industries, and it was in fact the cotton industry that was first revolutionised. The home market for cotton goods was served by an industry which used a linen warp with a cotton weft; the English manufacturers, who had a virtual monopoly of this kind of cloth in the home market, had not succeeded in producing a cotton thread strong enough to serve as a warp. Internal disorder in India, and the Anglo-French struggle there, interrupted the supply of Indian cotton piece-goods for export by British merchants. New markets were being opened up in the colonies and tropics. Cotton-growing was being introduced into the southern states of the United States of America, promising ample supplies of raw material. There arose, then, the technical problem of how to expand British manufacture.

Necessity is the mother of invention; it was necessary for the domestic system to be changed into a factory system designed for large-scale manufacture if advantage was to be taken of these new conditions. The inventions were the result of this necessity, and not *vice versa*.

Already, in 1733, John Kay of Bury had invented the "flying shuttle", which enabled the weaver to weave wider cloth, and weave it more expeditiously than before. This invention made even more acute the problem resulting from the fact that the spinners had been unable to provide sufficient yarn to meet the needs of weavers.

Many attempts were made to meet the situation; and in

1770 James Hargreaves, a weaver of Blackburn, patented a "spinning jenny", which increased the number of spindles which could be turned at once.

It would appear that a spinning-machine was invented in

Textiles.	Iron, steel and engineering.	Coal.	Transport and communications.
1733: Kay's "flying shuttle". 1764: Hargreaves' "spinning jenny". 1769: Arkwright's "water-frame". 1779: Crompton's "Mule". 1785: Cartwright's power loom. 1790: Cartwright's wool-combing machine. <i>Wool</i>: Australasian supplies after 1830. <i>Cotton</i>: Surpassed wool as chief British export by 1870. Egyptian cotton imported after American Civil War (1861-65). Expansion of cotton trade to 1913. <i>Organisation in cotton industry</i>: individual competing firms; specialisation. <i>Wool</i>: concentration in Yorkshire after Industrial Revolution.	About 1700-50: Spread of the Abraham Darby's method of using coal to smelt iron. 1780: Cort's puddling process. 1856: Henry Bessemer's converter. Coal used in furnaces. 1868: Siemens-Martin process. 1878: Thomas-Gilchrist process. Great Britain leading producer of iron and steel until 1890. Development of machine tools and precision engineering. <i>Organisation</i>: Little combination.	1720s: Newcomen's pumping engine. 1781: Watt's engine using rotary motion. 1815: Davy safety lamp. 1815: First efficient colliery locomotive. Expansion from 1815. <i>Organisation</i>: Diversity of units.	<i>Roads</i>: <i>Engineers</i>: Telford (1757-1834); Metcalf (1717-1810); McAdam (1756-1836). <i>Canals</i>: 1761: Bridgewater Canal. 1773: Manchester-Liverpool. 1777: Trent and Mersey Canal. End of the eighteenth century: Canal "mania". <i>Railways</i>: 1825: First public line: Stockton and Darlington Railway. 1840s: Railway "mania". Main lines laid down by 1870. <i>Steamships</i>: Atlantic first crossed 1819. But sailing ships persisted until 1860s. 1875 onwards: steel ships. <i>Other Communications</i>: 1840: Penny Post. 1830s: Telegraphy. Wireless-telegraphy at end of century. 1814 onwards: development of power printing.

CHART 3.—TECHNICAL INVENTIONS AND INDUSTRIAL ORGANISATION IN THE EIGHTEENTH AND NINETEENTH CENTURIES.

the 1730s by John Wyatt, who became associated with a certain Lewis Paul. Wyatt's invention was patented in 1738, and he hoped that several machines would be worked at once by the source of power—the nature of which is obscure. The invention was sold in 1742 to Edward Cave, who set up a

workshop at Northampton. But poor administration was responsible for the failure of this factory, and the plant was ultimately sold to Richard Arkwright.

It was with Arkwright's "water-frame", patented in 1769, that the new era of factory production was ushered in. Arkwright's invention spun the thread by means of water-driven rollers; the machine could not be worked by hand, and it was too expensive for the home-worker. Arkwright set up a mill on the Derwent at Cromford in Derbyshire, and produced yarn for stockings. It is noteworthy that Arkwright was driven from Lancashire by the resentment of the hand-workers.

In 1779 Samuel Crompton's "Mule", so called because the machine combined the principles of the water-frame and the jenny, superseded its predecessors. It produced yarns which were both strong and fine—Arkwright's yarn, though strong and suitable for warp, was coarse—so that muslins (fine cotton cloths) could be produced in England. Many hundreds of spindles could now be turned by one spinner. But the jenny cottage industry did not die a sudden death, and, indeed, it continued to produce yarn for weft; mules could be set up in workers' homes. By the end of the eighteenth century the mules were generally worked by water-power (steam was not in general use in textile factories before the middle of the nineteenth century); and in any case it was more convenient for a capitalist manufacturer to set up jennies and mules together in factories.

These inventions reversed the situation existing between spinners and weavers: the quantity of yarn spun overtook the capacity of the weavers to deal with it. Weavers found themselves in scarce supply, and consequently enjoyed high wages. Naturally enough, inventive capacity was now turned to the weaving problem; and in 1785 Edmund Cartwright invented a power loom. The early model was a clumsy affair; but it was improved, and came into general use after about 1820.

Its introduction was marked by considerable resistance. Kay's "flying shuttle" was the basis of the weaving industry, and machine-breaking was the inevitable response to an

invention that threatened the settled security of workers. But although hand-weaving continued for years, and did not disappear until the middle of the century, power-weaving had come to stay. After 1789 the power loom was adapted for steam-power.

The humid atmosphere of Lancashire (cotton thread was inclined to break if spun in a dry atmosphere); the fuel supplies in the shape of streams and later of coal; the obvious advantages of Liverpool as a port for the importation of raw materials and the export of finished goods; and the lack of competition from the Clyde valley, which possessed equal advantages but preferred to concentrate on shipbuilding, caused Lancashire to become the most important home of cotton manufacture in Britain. With the opening up of the tropical markets, cotton surpassed wool in importance in Britain, and by 1870 cotton goods comprised the chief British export, woollen goods coming second.

The cotton industry developed rapidly. After Hargreaves' invention the domestic industry expanded quickly, the weavers and their looms increasing at their greatest rate to try to keep up with the spinning jennies in the homes of the spinners. This was perhaps the period of maximum extent of the domestic industry. But in 1785 Arkwright's patent was cancelled, and thereafter the factory system became established. Because of the abundance of water-power, the South Lancashire area became the most important of the cotton-spinning districts. In 1788 there were 41 mills in Lancashire, 17 in Derbyshire and 11 in Yorkshire, these comprising more than half those in the country. Many manufacturers (including Arkwright himself) owned several factories: the new organisation of the cotton industry was necessarily capitalistic. But the old and the new ways lived on together; the "factory system" as we understand it did not come suddenly. From 1780 Crompton's "mule" spread through the country, and this machine was adapted for use in the cottages. A modern counterpart lies in the boot and shoe industry: right up to the end of the nineteenth century, when mechanical inventions began to affect the footwear industry, boot manufacture in

Norwich was largely in the hands of "garret masters", small employers on whose premises some of the work was done, whilst various processes were done in the workers' homes.

In the cotton industry of this time hand- and power-loom weaving existed side by side, and sometimes the raw material and the plant were owned by different people. Not until 1800 could cotton manufacture be said to be a "factory" industry; and it was to be a decade or so after that before steam-power displaced water-power. The hand-loom weaver was not finally superseded until the 1860s.

The early "companies" consisted of partnerships of capitalists; it was the nineteenth century which saw the beginning of the joint-stock enterprises. No doubt it is to the strong individualistic tradition of the cotton manufacturers that the lack of effective combination, which subsequently proved a handicap to the efficient organisation of the British cotton industry, can be traced.

The cotton industry had not to fight against the established practices and traditions of an old-established industry. Invention and reorganisation went on much more slowly in the woollen industry, where, in fact, there was not such great incentive to change. The early woollen industry was carried on in three main districts: Yorkshire, Norfolk, and South-west England, though within each area it was diffused, as it was indeed on a smaller scale throughout the country; only in Yorkshire was there a degree of localisation in the West Riding. The industry was a domestic one; John Kay's "flying shuttle" spread slowly. The weaver owned his raw material and the tools, often owning both spinning- and weaving-machines: the industry could be described as one carried on by a class of small manufacturers, assisted sometimes by a few journeymen, and these manufacturers acted also as merchants of the finished cloth.

But when production outstepped local needs, and it became necessary to produce for a market far afield, the merchant clothier, a capitalist, became of importance. From the first, the merchant had taken charge of the finishing processes. In the south-west of England, particularly, the merchant capitalist

bought the raw wool, and saw it through the processes of carding, spinning, weaving, fulling and dressing with the use of his own capital. The weavers might work for several manufacturers and consider themselves independent workers; but by the end of the seventeenth century and beginning of the eighteenth century the process of subordination to a capitalist merchant employer had gathered impetus. In Norfolk, where wool-combing was predominant and needed comparatively large amounts of capital, the best conditions for capitalist organisation existed, and a class of middlemen, the "master-combers", arose.

These "merchant clothiers", who became dominant in the organisation of the woollen industry during the eighteenth century, were often called "manufacturers", but they were really merchant employers. The former small producer became a wage-earner, especially in the towns to which he drifted; and when the processes of manufacture became more extended and complicated, specialisation of occupation developed.

The scattered nature of the woollen industry kept it a local one until the end of the eighteenth century. But at that time the industry found its centre in the West Riding of Yorkshire, where water-power was readily available, and where there were rich coal deposits and facilities for importing and exporting. Australasian supplies became available after 1830, and by that date Yorkshire had established itself as the premier wool-manufacturing county. Norfolk (where weaving was introduced by the Dutch and Walloon Protestant immigrants in the later years of the fourteenth century) had no coal; and in the south-west of England the merchant manufacturers were slow to avail themselves of the new technical equipment.

The first worsted mill was established in Yorkshire in 1787. In 1790 Cartwright invented a machine for wool-combing, although it did not come into general use before the end of the first quarter of the nineteenth century. By 1800 spinning and weaving and carding were carried on by machinery, though it was not until the middle of the nineteenth century

that hand-weaving was finally displaced. The coming of machinery changed the face of Yorkshire; and wool followed cotton as a mechanised industry, localised in certain parts of the country. Though in the Tweed valley and in the west of England woollen towns existed, and wool was also manufactured in the Scottish lowlands, most worsted production, as distinct from woollen manufacture, became localised around Bradford: the raw material of worsted is merino and fine-quality wools, whilst that of the woollen industry is the medium- and lower-grade short-stapled wool. Geographical specialisation was not so marked as in Lancashire; generally, the north and west concentrated on the production of worsteds, while the south and east produced woollens.

Linen manufacture, far less important in England than the other textiles, was mechanised even later. Belfast and Dundee became the chief centres. The protected silk-manufacturing industry had to face severe competition from French manufactures after 1860, when the duties on imported silk manufactures were abolished.

The Civil War (1861-65) cut off American cotton supplies, and cotton was imported from India and Egypt. The Egyptian long-stapled cotton was, indeed, especially suited to the Lancashire cotton industry.

During the nineteenth century there were changes in both the composition of the cotton trade and the markets. The development of machine spinning on the Continent halted the expansion of yarn exports to Europe; but the export of yarns to India, China, Japan and the Near East increased, until the establishment of spinning-mills in those countries after 1880 halted the expansion. In the early nineteenth century Europe and North and South America were the chief markets for piece-goods; but Europe and the United States set up weaving-mills and protected their industries by tariffs. By 1900 British India was taking nearly 45 per cent of the cotton piece-goods exports, China and Japan about 10 per cent, and South and Central America about 10 per cent.

In general terms, until 1913 there had been a hundred years of expansion in the cotton manufacturing and exporting

industry of England, concentrated in Lancashire. Though the British proportion of total world output was declining, this was due to the growth of the industry in other countries, not to an absolute decline. After the disturbance of the First World War there was a great demand for cotton goods in Eastern markets, and there was a price boom, which, however, broke in 1920. From 1925 there was a progressive decline in cotton exports, and the Lancashire cotton industry entered on a period of terrible depression; the recovery from this between 1931 and 1939 was only slight.

The depression in cotton was due mainly to losses in the export trade as a result of Japanese and other foreign competition. Countries formerly relying on imports set up their own plants; Indian industrialisation was an important factor in the decline.

The modern development of the organisation of the cotton industry was one of specialisation. Raw cotton was imported by Liverpool importing merchants through brokers, who distributed it to spinners. The spinners manufactured the yarn and sold it through agents and brokers to weavers working to the orders of piece-goods merchants. The finishing operations of bleaching, dyeing, and packing were done by firms working on commission for the piece-goods merchants.

An important feature of the organisation of the cotton industry was the fact that a large number of independent undertakings were engaged in it, each firm trying to specialise. Not only that, but in Lancashire there was geographical specialisation, the northern towns being generally engaged in weaving, and the southern in spinning. Various processes, *e.g.* spinning processes, became specialised in certain towns. Though this division of labour carried with it the advantages of such specialisation, the corresponding disadvantages were keenly felt in time of depression. Whereas in Japan most of the raw cotton was imported by a few large undertakings which also controlled the greater part of the yarn and piece-goods exports, in England there were numerous importers and piece-goods merchants.

Japanese industrialists not only had the advantages of

cheaper raw material and lower labour costs; they used more up-to-date machinery and better methods of organisation and marketing.

The rugged individualism of the manufacturers of the north of England wavered under the threat of the deposition of "King Cotton". The depression of the twenties was met ineffectually by a policy of "organised short time" advocated by the Provisional Emergency Cotton Committee, formed by a number of spinners in 1922, to supplement more effective centralised control of selling. In 1927 an attempt was made to form a cartel to regulate prices and output and the grading of yarns: the American Cotton Yarn Association, with capital subscribed by spinners. Undercutting of prices by firms outside the cartel caused its failure. In 1928 a Joint Committee of Cotton Trade Organisations was formed to co-ordinate the sections of the cotton industry, and it rather belatedly recommended large-scale amalgamations so as to secure the economies resulting from standardisation and bulk buying and selling. The Lancashire Cotton Corporation was created: a combine which attempted to recondition mills, scrap obsolete plant and organise production of standardised yarns and cloths.

But the depression pursued its inexorable way: in 1932-33 the annual average export of piece-goods amounted to only 33 per cent of that of 1910-13; Japan's exports had caught up to Britain's.

The excessive specialisation which in many ways proved the undoing of the Lancashire cotton industry seems to have begun about the eighteen-seventies. In weaving, particularly, the private firm was prominent, constituting about one-third of the total before the First World War; in spinning the joint-stock form of organisation predominated.

On the outbreak of the Second World War the Government took over the bulk buying of cotton. Preoccupation with what the shape of the cotton industry was likely to be after the war inspired a Cotton Textile Mission to the United States, led by Sir Frank Platt, the Cotton Controller, to survey the American cotton industry and advise on changes of method

which the mission considered might fruitfully be adopted in this country. The American cotton industry was more efficient than the British; the mission was sent to find out why. It came back with the answer that the superior productive efficiency of the Americans was due almost solely to greater mechanical efficiency in the United States. It recommended a "major operation" in the Lancashire cotton industry, necessitating greater mechanisation and modernisation. The basic objects of the Mission's recommendations were the attainments of a higher degree of standardisation and specialisation so as to give bulk production; an improvement in the standard of technical equipment and working conditions; greater co-operation between spinners and weavers; more scientific management; the raising of labour productivity and greater economy in production costs; and the raising of wages by the application of scientific methods to the processes and plant utilisation of the industry. A "vital requirement" of the British cotton industry was a modification of the methods of distribution.*

In March, 1946, the House of Commons approved the Government's decision to continue permanently the system of bulk purchase by the State, instead of reopening the Liverpool cotton market. A system of centralised control was not to be rigidly applied; in a number of cases the responsibility for importing raw cotton had already been handed back to private enterprise. But the Raw Cotton Commission gained little affection in the cotton industry. With a change to a government of freer-enterprise principles, a process of "unscrambling" began; by 1952 spinning-mills consuming about one-third of cotton imports had used their option and decided to buy privately. In May, 1954, the Liverpool cotton "futures" market was reopened.

The story of Lancashire cotton is an outstanding example of the way in which weaknesses in organisation due to an exaggerated individualism can result in dire consequences to an industry. Lancashire was still living in the mental atmosphere

* *Report of the Cotton Textile Mission to the United States of America, March-April, 1944* (H.M.S.O., 1944).

of the early nineteenth century when a new environment surrounded her.

A characteristic of cotton is that it is easily graded—ten distinct grades of cotton were recognised by the Liverpool Cotton Association—and this enabled “ futures ” dealings to take place, *i.e.* dealings in which the commodity is bought and sold for future delivery at prices determined at the time of the contract. A certain amount of speculation arose in the cotton market by people who merely bought and sold without any intention of taking or making delivery; but it was argued that such speculation was legitimate and indeed useful to the community when its result was to “ iron out ” prices and so prevent disastrous fluctuations.

Wool is far less easily graded; wool has been generally disposed of by auctions, the chief European centre for the sale of imported wool being the London Wool Exchange. Bradford became the commercial centre of the wool industry; the Bradford merchant not merely buying and selling but directing the nature of the manufacture and finishing processes.

The woollen trade was affected by the depression as the cotton industry was. The Far East markets were lost, and the competition of Germany and other countries became serious. The lighter and finer fabrics attracted a greater demand than the heavier; the hosiery trade grew in the years following the First World War. The woollen manufacturers therefore concentrated their attention on the clothing factories; whilst the worsted spinners turned more to the hosiery markets.

2. The Revolution in Iron

In order that the machines for the manufacture of textiles could be made, it was necessary that there should be advances in the technique of iron production. Iron of a sort had been produced in this country from earliest times—iron-smelting was carried on by the Romans. Iron was needed for the chain and plate armour of the knights and fighting men of the Middle Ages; and on the introduction of cannon the demand was stimulated greatly.

The iron was smelted by charcoal produced from the timber of the forests of the country, which was used so lavishly that by the beginning of the eighteenth century there was a shortage of timber. In 1700 the iron-smelting centres were in the Weald of Sussex and the Forest of Dean in Gloucestershire, where guns were made. Coal was considered as a substitute for charcoal when the timber famine became acute; but a difficulty was that sulphur from the coal combined with the iron and caused it to be brittle.

By the beginning of the eighteenth century the iron industry was in decline. The ironworks were declining in Sussex and in the Forest of Dean; the few round Birmingham and Sheffield, where ironmongery and cutlery, respectively, were made (the district had the advantage of the presence of millstone grit and the streams of the Pennines), were not able to meet the demands of these towns for iron; and Swedish iron was imported through Hull. Throughout the country generally there were many small centres of production of such articles as knives, general cutlery, hammers, files and tools of various kinds.

The general organisation of the iron industry was in the hands of mining companies and trading companies; in contrast, the coal-mines were owned generally by private persons. In the metal-working industries small specialised workshops prevailed; it was only by the middle of the eighteenth century that there came a tendency towards capitalist manufacture.

Early in the eighteenth century Abraham Darby of Coalbrookdale invented, or at least employed, a method of using coke from coal for smelting iron; and his son Abraham Darby carried on the process, knowledge of which spread after 1750. The result was that iron production left the forest clearings and became established on the coal-fields of South Wales, the Clyde valley, Yorkshire and the Black Country.

The "ironmaster" of this age used the opportunities that had become available now that the old dependence on wood had disappeared. The Darbys developed their ironmastering activities over three generations. The Wilkinsons were another family renowned in the history of ironmastery: in

1775 John Wilkinson ordered a steam engine from Boulton and Watt—the first to be used for a purpose other than merely pumping.

Coal, iron and water-power were present in South Wales, but the lack of good road communications with the rest of the country tended to isolate this area. Nevertheless, works were set up there by the 1780s, and also in the Scottish lowlands: John Roebuck founded the Carron works in 1760. The Rotherham foundries in Yorkshire were founded by Samuel Walker in 1741; by 1796 (Walker having acquired by dubious means the secret of making tempered steel first discovered by Benjamin Huntsman in 1750), the Rotherham works had £200,000 worth of capital invested in them. Although large amounts of capital were required in the organisation of such ironworks as these, it was found by small groups of men working as partners. It is to this fact that one may ascribe the tradition in individualism that existed in the British iron industry as it did in the textile industries.

In 1780 Henry Cort invented a process of puddling the iron to get rid of impurities and rolling to produce malleable iron. By 1800 Watt's steam engine was superseding water-power for the blast for furnaces and for power in rolling mills; and in 1828 Neilson invented a hot-blast furnace, by which air was heated before being forced into the furnace, thus economising fuel and accelerating the smelting process. Neilson's process gave rise to the Scottish industry.

Imported pig-iron, freer from impurities than the British, had been imported from Sweden and Russia for the hardware industries springing up in the Midlands. Towards the end of the eighteenth century, heavy duties were imposed on the importation of this iron. They were reduced in 1825 and subsequently abolished, but by that time the iron industry had become well established.

In 1839 Nasmyth invented a steam hammer for use in forging iron, and his design was put into practice a few years later.

In 1851 an iron-field was discovered in the Cleveland district of Yorkshire; and Middlesbrough and Tees-side developed rapidly.

Steel is an alloy of iron and carbon, a fact which has been known or at least acted upon from early times, but the amount of carbon could not be controlled. In 1856 Henry Bessemer used a converter which oxidised the impurities and added the correct amount of hardening material, so that molten iron could be readily converted into steel. The steel produced by Bessemer was more malleable, stronger and cheaper than the malleable iron formerly used for such commodities as rails and girders; and his steel could be produced in greater quantities. A result was that the existing ironworks became obsolete and had to be replaced by steelworks.

A fault with the Bessemer converter was that it failed to remove phosphorus from the iron, and most British ores contain phosphorus; so that for the production of non-phosphoric steel, ores had to be imported from Spain and Sweden. In 1868 the Siemens-Martin open-hearth process, using iron and steel scrap instead of iron ore, also came into use. In 1878 both these processes could be used for the production of steel from phosphoric iron ores through the invention of the Thomas-Gilchrist process, which consisted of lining the converters and open hearths with basic materials which absorbed phosphorus.

So it was that more iron ores could be used in the production of steel—and a great German steel industry could be built up with the ores of Lorraine and Luxembourg. Greater quantities of steel could now be produced at cheaper prices, and transport and engineering and building projects received the advantage of strong, cheap materials; in addition, armaments could be produced in great quantities.

Until 1890 Great Britain was the leading producer of iron and steel. Then her output was exceeded by that of the United States, and Germany succeeded in surpassing Britain's output in 1903. In 1913 Great Britain was producing 10 million tons of pig-iron, the United States 30 million tons and Germany 16 million tons.

These developments were reflected in the export trade. British pig-iron exports ceased to expand after 1870; the finished iron exports declined, whilst the export of sheets,

tin-plates and tubes increased. Britain was concentrating on high-grade steel and developing a trade in steel bars and sections. This trade was based on imports of semi-manufactured steel, for the Continental makers of cheap basic steel were able to undersell the British manufacturers.

British costs were comparatively high: as in the case of textiles the strongly individualistic character of British organisation in the steel industry led to only a limited degree of combination and prevented co-ordinated planning of the industry as a whole. The main trade associations, or "conferences", were affiliated to the Iron and Steel Federation; they were concerned with eleven branches of production: pig-iron; steel; steel sheets; tin-plates; hot finished tubes; wire and wire rods; heavy forgings and railway tyres, axles, solid wheels and disc-wheel centres; alloy and stainless steel; crucible and high-speed steel; light rolled-steel products; and bolts, nuts, screws and rivets.

Before the First World War the larger proportion of sales at home and abroad was made by merchant houses; after the war, when the decline in the export trade occurred, the tendency was for manufacturers to market their own products by contract and to set up associations to control prices and allocations of orders.

The Second World War set up, of course, unprecedented demands for steel. The coming of a Labour Government at the conclusion of the war resulted in the nationalisation of the steel industry—a "doctrinal" move dictated by the current socialist preoccupation with nationalisation as a panacea for all economic ills. The see-saw of politics resulted in a Conservative Government in 1951; and the Government, following a view held not merely by its own supporters but also privately by many Labour adherents, proceeded to "unscramble" steel in 1953. The Iron and Steel Act, 1953, set up an Iron and Steel Board, appointed by the Minister of Supply, to exercise a general supervision over the iron and steel industry with a view to promoting the efficient, economic and adequate supply under competitive conditions of iron and steel products; and it had certain powers to determine the

maximum prices to be charged by producers in the United Kingdom for iron and steel products.

Since 1939, many firms took part in an arrangement known as the Industry Fund by which the excess cost above home prices of imported pig-iron, scrap, semi-finished steel and finished steel was spread over the cost of steel production. The Industry Fund was fed by levies determined by the Iron and Steel Federation, an organisation comprising the majority of iron and steel producers.

By 1958, the attitude of some trade-union leaders suggested that a re-nationalisation of the steel industry should be accomplished with a minimum of derangement: the companies could be left with their existing names and individualities, but their shares could be transferred to the State, and the Board's powers to control and co-ordinate policy on prices, production, development and exports could be strengthened.

3. The Rise of Engineering

The Machine Age has necessitated the development of precision engineering; indeed, the Industrial Revolution as we know it could hardly have occurred without the coming of machine tools by which textile and other machines could be mass-produced. In the eighteenth century a machine could not be introduced into a factory with confidence that it would run without constant attention and frequent breakdowns. By the middle of the nineteenth century the development of accurate machine tools enabled textile and other machinery to be mass-produced, and so made possible the mounting tempo of a true industrial revolution.

In the application of steam-power to industry the development of engineering techniques was especially necessary. Water-power had previously been used to turn wheels working flour-mills; and in the late eighteenth century it was used to drive textile machinery. But water-power is unreliable, and necessitates the siting of the factories on the banks of streams. As coal came more into use as a source of power, the working of deeper seams called for pumping machinery to pump the water out of the mines. A steam pump invented by Thomas

Savery in 1698 was unsatisfactory. In the early eighteenth century, an engine invented by Thomas Newcomen was used, but proved wasteful and unreliable. In the last quarter of the eighteenth century, James Watt devised a steam engine working on the rotatory principle, and with a tubular boiler and a steam jacket around the cylinder. Watt's partner in the firm of Boulton and Watt, Mathew Boulton, succeeded in boring cylinders accurately.

The application of steam to industry took place only slowly. There were only a few undertakings producing steam engines under the licences of Boulton and Watt, who held the patents; and there was an absence of skilled engineers. But it was not long before the ironmasters seized the opportunity to equip their factories with the new source of motive power. The alliance between the metal-works and steam-power began. By the middle of the nineteenth century steam was in general use in the textile factories. It was applied, too, to flour mills, malt mills, flint mills and in the sugar-cane crushing mills. Indeed, Watt himself, with the aid of John Rennie, arranged the equipment for the Albion flour mills, which were built in 1786.

The first public railway line to use locomotives, the Stockton and Darlington Railway, was opened in 1825. Steam paddle ships were being used on inland waterways in the opening years of the nineteenth century; in 1819 the *Savannah* crossed the Atlantic with much assistance from her sails, and in 1838 the *Great Western* crossed under steam power alone.

The precision steam engine enabled the factory system to be set up on the coal-fields and iron-fields of the country; it made possible the development of rail transport, so that the country was covered with a network of railways. Engineering skills branching out from this basic technique have resulted in the establishment of a multitude of trades, *e.g.*: agricultural machinery; textile machinery; locomotive and shipping machinery; and the great diversity of trades grouped under the phrase "motor industry". There is a corresponding diversity of methods of production and distribution. It has become difficult to define the term "engineering"; and standardisation

and the application of research in related or distantly-related trades and techniques have made for greater and greater precision in machines and specialisation of product. The diversity of product has made combination difficult, especially in selling.

The nineteenth century, especially the last quarter of it, was an age of expansion of "engineering". As we have seen, the textile machinery first began to be produced towards the close of the eighteenth century. Industries producing locomotives, rolling stock and railway equipment arose with the railway era of the 1830s. The small metal-working undertakings which had been handicraft trades turned over to mechanical means of production and began to make machine tools. The production of gas-engines began in the 1870s. During the next decade electrical engineering and the cycle trade reached a position of importance. Then came the motor industry in the nineties; and during and after the First World War the aircraft industry expanded. The growth of radio and television production is within the personal knowledge of present-day readers.

The internal-combustion engine was first invented as a gas-engine by Lenoir in 1860; and Lenoir later produced a road vehicle driven by coal gas. This method of propulsion by road raised the problem of fuel supply. But soon after the middle of the nineteenth century, large oil-fields were discovered in the United States; and the use of petrol was developed. Successive improvements in petrol-driven engines were made by Markus in 1865, Otto in 1875, Benz in 1878 and Daimler in 1883. Daimler began the production of motor-cars in Germany; and in 1889 the manufacturing rights in the Daimler engine were acquired by Panhard and Levassor, who began to produce vehicles in France. The English Daimler Motor Company was founded in 1896.

Dunlop took out a patent for pneumatic tyres in 1888, when the bicycle was becoming a popular means of transport. The principle was applied to the motor-car. The necessity for lightness of weight in proportion to power in the motor-car engine led to developments in alloy steels. After the

eighteen-eighties efficient electrical ignition devices were available.

The principle of standardisation of parts was, however, not followed in this country to the extent that it has been followed in the United States and Germany. Because Great Britain has had to cater for a large number of different foreign markets and for a home market smaller and less uniform than that of the United States and Germany, the engineering industry, apart from the heavy equipment production, became extremely diversified. The west Midlands in particular became the chief centre of the light-engineering industry. Coventry, Birmingham and Wolverhampton became known for cycle and later motor-car manufacture. But the British manufacturers' failure to organise for standardisation and mass-production lost them the lead in motor-car manufacture to the United States, where the size of the manufacturing firms expanded. The Ford Motor Company began to concentrate on the production of a cheap standardised car in 1908; and by 1915 three-quarters of American car production consisted of such cars. In contrast, the British firms remained small in size and many in number.

For thirty years before the First World War, the British engineering industries were expanding; in 1909-13 the exports of machinery were three times as great as they had been in 1880-84. In 1913 about 1½ millions were employed in engineering occupations, including shipbuilding.

After the post-war boom there were more people employed in engineering than the industry had the power to absorb permanently. When the time of the depression came, about 1920, there were many unemployed. The pattern of the branches of the industry changed, too. The "heavy" industries of the north and east declined, and the "light" industries—radio, sewing-machines, electric appliances, etc.—increased in importance, being attracted to the south-east counties, where there was a large market for their products, and not being tied to the coal-fields for fuel and power.

In the world markets, Britain lost her lead to the United States and Germany. With some exceptions, such as

Vickers-Armstrong, John Brown, Cammell Laird, Britain's engineering industries followed the same pattern of individualised small manufacturing firms as in textiles; and in selling their technique was well behind that of Germany and the United States.

So matters stood until the outbreak of war in 1939 once more re-set the stage for a further phase of the Industrial Revolution; and science was applied even more ingeniously and meticulously to the fashioning of engines of war.

4. Coal

In contrast to metal mines, such as copper-mines, which were worked by companies of varying importance, coal-mines were nearly always worked by private persons, sometimes the owners themselves—for example, the Duke of Bridgewater, who built the Worsley canal to ship his coal to Manchester—but more often by contractors, who paid a royalty on the coal they extracted.

During the Middle Ages coal mined from deposits on or near the coast was used in towns; it came mainly from Newcastle. Coal was introduced into such industries as brickmaking, brewing and dyeing by the beginning of the seventeenth century; and the deforestation of the country, which had so alarmed the Tudor monarchs and threatened the early iron industry, turned the attention of ironworkers to coal. But lack of knowledge to overcome the impurities inherent in coal as a fuel for iron-making led to the neglect of the immense deposits of the country, while charcoal became scarcer and dearer. It was only when the Darbys invented a method of using coal for iron-making in the early years of the eighteenth century that the problem was solved.

The use of the steam pump made possible the working of deeper seams. In 1815 the Davy safety lamp was invented, and the result was an increase in production because the more dangerous seams could then be worked. In 1815, too, Stephenson manufactured the first efficient colliery locomotive. By the middle of the nineteenth century steam could be applied

to wind the coal up the shafts; and by the middle of the century, too, railway transport became available for coal, and the slower canal traffic was superseded. Coal-cutting machinery worked by compressed air was introduced soon after the middle of the century.

From about 1815 the coal industry expanded, so that by 1860 the output of the country's industry had risen to about 80 million tons per annum. In 1913 the output was 287 million tons; one-tenth of the whole occupied male population of the country was then engaged in coal-mining.

Coal, indeed, was the basis of Britain's prosperity. It provided the fuel for her expanding iron and steel and engineering industries; it was sold to countries undergoing the process of industrialisation, these exports thus avoiding the sending out of British ships in ballast and so keeping the freight rates and prices of imported goods, and therefore manufacturing costs, low; it satisfied the demand arising from the introduction of steel ships.

But this expansion was obtained at a price—the exhaustion of the more accessible seams. Coal is a factor of production in “inelastic supply”; the cost of production in the industry was rising. The average annual output per head reached a maximum, indeed, in the last quarter of the nineteenth century. The Coal Mines Regulation Act of 1908 reduced the length of the working day, and this made for a further decline in output.

The First World War accentuated the changes that deeply depressed the British coal industry. Output fell to 208 million tons by 1933; numbers employed, including salaried persons, fell from 1,127,000 in 1913 to 797,000 in 1933. There was a brief stimulus to British coal output in 1922 and 1923, owing to a sixteen-weeks' strike in the United States in 1922 and the French occupation of the Ruhr in 1923. But the real seriousness of the coal position could not be long obscured. The Government control of the war period and afterwards, with its fixing of prices at home at a low level and the licensing of exports, had after-effects when depression came and prices were forced down.

The post-war depression hit the coal industry very severely, for other factors came into play to make conditions worse. Improvements in boiler and furnace design and technique reduced demand abroad; in industry and transport, electricity and oil became powerful rival fuels; the use of oil for ships reduced the demand for coal; foreign coal-producers reaped the benefit of British experience, and could produce at lower costs; road transport, using the internal-combustion petrol engine, became a great rival to rail transport.

The British coal industry lacked up-to-date equipment; and the costs of marketing and distribution were high. And once again the same story is told of coal as of other industries: there were many producing units of the most diverse nature, with a lack of co-ordination between them. From August, 1925, to May, 1926, the Government subsidised the coal owners; and this was merely a putting off of the evil hour of reckoning. The seven-months' strike in 1926 had no other effect than the worsening of the position of all concerned.

The Royal Commission on the Coal Industry of 1925 had pointed to the bewildering variety of producing units with their differing costs of production, size, scope of operations, organisation and degree of business prosperity. In 1924 there were 2,480 mines belonging to 1,400 separate undertakings; and these undertakings ranged from those owning small pits employing a dozen miners to large companies controlling several mines and employing thousands of men. Ninety-eight per cent of the total production in 1923 came from 715 undertakings each employing over 100 persons. The average age of mines employing 500 persons or over was fifty-one years; more than 78,000 miners were working in mines more than 100 years old. The Commission found that output per man-shift rose with the increase in size of the undertaking, whilst costs fell. On the other hand, proceeds per ton were generally higher with the small mine because of its nearness to the market or the higher quality of the coal mined. In general, the balance of advantage seemed to lie with the larger groupings.

Statistics indicate that the percentage of coal cut by machinery was 42 per cent in 1933 as compared with 8 per

cent in 1913. In 1929 75 per cent of the bituminous coal from United States mines was mechanically mined. But it has to be mentioned that much of the coal of this country lies in inclined seams and is unsuitable for mechanical cutting. Nevertheless, the British coal industry was slow in adopting mechanical methods where these were possible.

The rising costs of distribution were another feature commented on by the 1925 Commission: there was a wide gap between the prices paid at the pit head and those paid by consumers. In the home market the coal was and is still distributed by three main agencies: the wholesalers or factors, buying coal direct from the collieries and selling it to merchants and/or directly to consumers, both householders and industrial users; the coal merchants, who buy their coal from wholesalers or sometimes direct from the collieries for resale to householders and some small industrial undertakings; and the small retailers, who buy from wholesalers or merchants for resale to householders. Lack of standardisation in the transport system increased the transport charges: the ownership of wagons was divided between the private owners and the railways.

The Commission recommended an extension of co-operative trading, the consolidation of the agencies engaged in distribution, increased municipal trading, and the establishment of marketing organisations by the collieries themselves.

The variation in efficiency among the mines did not encourage vertical combination, but the necessity to introduce some sort of order into prices led to horizontal combination in the form of pools or cartels. Some such attempt had been made in the nineteenth century by the Newcastle Coal Vend, which controlled the sales of coal sent by sea to London from the north-east; it broke down when it had to face the competition of coal sent by rail to London. Before the war, too, there had been some combinations formed in the South Wales anthracite area.

By means of quotas of output and subsidies on exports, attempts were made to meet competition in the contracted markets—schemes for this purpose were begun in South

Wales and Scotland; and the "Five Counties Scheme", which came into operation in the Midlands in 1929, was an attempt to meet inland competition by means of a subsidy on exports raised by a levy on the coal mined.

The Coal Mines Act, 1930, imposed on the industry Government control in the form of the regulation of production and the controlling of minimum district prices—the latter being a difficult task because of the variety of coal produced and the number and variety of markets. Part II of the Act established a Coal Mines Reorganisation Commission empowered to promote colliery amalgamations; in point of fact, between 1926 and 1933 thirty-eight amalgamations, covering 369 pits and 240,000 workers, were carried through.

Nationalisation of the coal industry seemed to be the only adequate and ultimate measure. Under an Act of 1938 a Coal Commission was established to take over the ownership of all coal and certain associated minerals as from the 1st July, 1942, and to promote amalgamations of colliery undertakings where the efficient working, treating or disposing of coal required it.

The Reid Technical Advisory Committee recommended (1945) the reorganisation of the industry on a coal-field or area basis, and the creation of a central authority with statutory powers to ensure the formation of such units and stimulate reorganisation plans.

The Coal Industry Nationalisation Act, 1946, completed this phase of the story by establishing public ownership and control of the coal-mining industry; and the National Coal Board became the entrepreneurs acting on behalf of the nation. Whatever views are held by those of varying political creeds on the necessity or expediency of nationalising iron and steel and related industries, the nationalisation of the coal industry, with its multitude of competing undertakings and the variations in efficiency and scale of production, has been generally regarded as an inevitable and necessary step.

CHAPTER V

THE INDUSTRIAL REVOLUTION: II. THE REVOLUTION IN AGRICULTURE

I. The Enclosure Movements

AGRICULTURE is the oldest of our industries, and though the developments in the manufacturing and constructional industries loom so large in the history of our nation, the necessity for a balanced way of life of the nation and for a source of food in time of direst need makes its study of the utmost importance. The problems of modern agriculture will be best appreciated in the setting of the historical background of the industry.

There has been more than one revolution in agriculture. A certain amount of enclosing of the land for sheep-rearing had taken place after the Black Death of 1348-49, when there occurred an acute shortage of labour. The process of commutation and the abandonment of their holdings by the serfs when commutation was refused by the lords tended to mitigate any hardship which might otherwise have been caused by enclosures. But by the middle of the fifteenth century landlords wishing to take advantage of the profits to be derived from satisfying the demands of the cloth trade often carried out enclosures of land by plain seizure. In Henry VII's time Parliament was forced to take notice of the hardships suffered by the poorer classes. Enclosures and the disbanding of the retinues of the barons at the close of the Wars of the Roses; the rise in rents due to rises in prices, helped by the debasement of the coinage by Henry VIII; the dissolution of the monasteries, and consequently the destruction of an important source of the relief of destitution, were the causes of the pauperism which gave expression to its resentment in such revolts as Kett's Rebellion in Norfolk in 1549.

The Tudors passed laws intended to check the enclosure movement, but as ever, economic forces proved stronger than enactments; especially since the Justices of the Peace, whose duty it was to enforce legislation against enclosures, belonged

1066 onwards.	OPEN-FIELD SYSTEM.
Fourteenth Century.	Export of Wool to Continent. 1348-49. Black Death—intensified ENCLOSURES.
Fifteenth Century.	Expansion of WOOLLEN CLOTH INDUSTRY. WOOLLEN INDUSTRY in hands of capitalist employers.
Sixteenth Century.	ENCLOSURES.
Eighteenth Century.	IMPROVED CULTIVATION. SECOND ENCLOSURE MOVEMENT. FOOD PRODUCTION FOR TOWNS. AGRARIAN REVOLUTION—Application of Science to Agriculture.
Nineteenth Century.	1750. Jethro Tull—Seed drill, horse hoe. Lord Townshend—Norfolk four-course rotation of crops. Thomas Coke—Estate improvement. Robert Bakewell—Improvement of stock. 1795-1833. "Speenhamland" System. 1816. Corn Laws. 1846. Repeal of Corn Laws. 1840-70. PROSPERITY.
Twentieth Century.	1870-1914. DEPRESSION—Competition from America and Australasia. 1914-18. FIRST WORLD WAR. Depression—Government efforts to help agriculture. 1930s. Marketing Schemes. 1939-45. SECOND WORLD WAR.

CHART 4.—AGRICULTURE FROM 1066.

to the class of landed gentry, and the interests of this class lay in the opposite direction.

The enclosures were not entirely disadvantageous to the country as a whole. It is true that there was a certain amount of depopulation and unemployment as a result; but to the extent that the open fields were enclosed and consolidated, and farming methods were improved, especially by the new owners of the previously monastery-held land, the new order was a

transition from medieval to modern farming. But the open-field system still largely prevailed at the end of the sixteenth century: one must not exaggerate the extent and nature of the "agrarian revolution" of that time.

During the next century and a half, indeed, there was little progress. The Stuarts opposed enclosures as the Tudors had done, but the general trend of public opinion was in favour of replacing the old, wasteful methods of cultivation. On the large enclosed farms experiments were made by leaseholders trying to get the best return for the rents they paid. Efforts at scientific breeding, manuring, drainage, and the growing of potatoes, hops, clover, and turnips, were made; the Earl of Bedford converted a large area of England into corn and pasture-land by draining.

It was in the eighteenth century that the second enclosure movement took place; it occurred as the result of the pressure of economic forces, and this time it had the authority of the State behind it. The enclosures that took place during the eighteenth and nineteenth centuries constituted an agricultural revolution comparable with that in industry; improved techniques were required not only of agriculture in general, but also of the small peasant in particular, for the latter's duality of occupation was coming to an end. As the factories grew, home weaving declined.

The scattered strips which constituted an agricultural holding in the early eighteenth century were a feature of the organisation of agriculture throughout the country. The open fields were also "common" fields in the sense that the land so designated was in the hands of several owners, some being freeholders, some copyholders, who occupied it on perpetual or very long lease. There were also "common" wastes and "common" pastures in the other sense of the word; but, legally, these belonged to the lord of the manor, though the landowners of the village would have rights of pasture or waste—rights regulated generally by the extent of land-ownership. Actual "common" cultivation in the sense of communal cultivation had disappeared by the eighteenth century.

The movement that was to sweep away the inconveniences of the "open-field" system began, indeed, in the fifteenth century. The turning of ploughland into pasture, the increase of personal estates, the partition of the open fields, and the seizure of common lands were really continued throughout the sixteenth century, and they slackened in the seventeenth century. The eighteenth century enclosures, often described as the second enclosure movement, may perhaps be discerned as the continuation of the first, after the seventeenth-century interval, with the difference that the second enclosure movement had the support of Parliament.

Parliament consisted of the representatives of the great landed interests, to whom the open fields were an obstacle in their schemes for the reorganisation of the country's agriculture. The petitioners for a Bill of Enclosure were the great landowning classes; they could afford the hiring of lawyers and the bearing of legal costs much better than the small men; and the commissioners to whom was entrusted the task of redistributing the land of the country were nominated by the petitioners. Not until 1801 was an Act passed to prevent the abuses to which this method of operation was obviously open.

The consolidation of the great estates effected by Enclosure Acts was carried a stage further when the small yeomen farmers were induced to sell their properties through becoming discouraged at the results of these measures, or by succumbing to the lures held out by the large landowners. There is no justification for blaming the factory system for the disappearance of the small yeoman. Often engrossing (*i.e.* the joining of small holdings on an estate into large farms) followed enclosure.

The picture of the effect of all these events on his native village has been painted for posterity in Oliver Goldsmith's immortal poem, *The Deserted Village*.

In the middle of the eighteenth century the open-field system still existed in about half the manors in the country. But the enclosure movement went on rapidly during the latter half of the century; and by the end of the century one-third of the arable land had been enclosed.

Between 1760 and 1820 Parliament approved over 3,000 Enclosure Bills, authorising the enclosure of about 6 million acres. In 1830-37 (the reign of William IV) the amount of enclosure was only about 250,000 acres, mainly because by that time there was little land left to enclose.

Macaulay, in the famous third chapter of his *History*, says:

The progress of this great change can nowhere be more clearly traced than in the Statute Book. The number of enclosure acts passed since King George the Second came to the throne exceeds four thousand. The area enclosed under the authority of those acts exceeds, on a moderate calculation, ten thousand square miles. How many square miles, which were formerly uncultivated or ill cultivated, have, during the same period, been fenced and carefully tilled by the proprietors, without any application to the legislature, can only be conjectured. But it seems highly probable that a fourth part of England has been, in the course of little more than a century, turned from a wild into a garden.

George II reigned from 1727 to 1760; the first two volumes of Macaulay's *History* appeared in 1848.

By enclosure, the peasant lost his woodland and grazing rights; he gained a little consolidated holding (by paying his share of the legal charges) and was faced with the expense of fencing—the provision of those fences and hedges which go to make up the appearance of the English countryside to-day. Sometimes he was only too glad to sell out to one of the new middle class: the rising wealthy industrialist needed land worth £600 per annum to become a county Member of Parliament and land worth £300 per annum to become a borough member, and needed, too, the prestige that went with landholding. Some peasants moved to industrial towns and became town labourers; some stayed where they were to become landless country labourers. Some used their capital wisely to become tenant farmers of a few hundred acres; some used their capital in the new manufacturing opportunities.

But the class of "old English yeomen" disappeared; the new social grading was: landowner or squire, tenant farmer, farm labourer. It has been estimated that at the end of the seventeenth century there were 180,000 freeholders in England; Arthur Young (1741-1820), who travelled extensively

over the country in his study of agricultural methods and became Secretary to the Board of Agriculture, saw with regret "their lands now in the hands of monopolising lords".

The picture is in contrast to the Danish scene: in Denmark enclosures were carried out by the Government in the interests of all classes of the community.

2. The Introduction of Scientific Management in Agriculture

Improved farming methods came as a revolution in agriculture, necessitating enclosures, proceeding concurrently with them and in some respects resulting from enclosures, since it was necessary to cultivate intensively to meet the expenses of enclosure. The pioneer work was done in the eighteenth century, and the nineteenth century saw the adoption, application and development of "scientific management" in agriculture: a term which means merely using one's resources to the best advantage, so that the organiser plans his work and applies his factors of production in order to obtain the maximum return.

The pioneers were landlords who pursued a policy of enlightened self-interest: higher rents became possible as a result of increased production; and the landlords responsible for the increase naturally claimed the reward of their skill and enterprise. Already, in 1750, Jethro Tull had invented a seed-drill and had used a horse-hoe. The Norfolk farmers enthusiastically turned their attention to better production; Lord Townshend ("Turnip" Townshend) introduced the Norfolk four-course rotation of crops—wheat, clover, barley, turnips—providing winter food for cattle and eliminating the fallow year. Thomas Coke, squire of Holkham, who became Earl of Leicester, invested half a million pounds in the improvement of his estate, and his farm became a model throughout Western Europe. He died in 1842 when over ninety years of age, full of honour and wealth. He believed in manure; he applied the theoretical knowledge dispensed by Arthur Young. George III ("Farmer" George) established a model farm at Windsor, and gave his support to the new

methods. Robert Bakewell improved the breed of stock. Threshing, reaping and haymaking machines were invented; artificial fertilisers were developed after 1850; drainage of land with pipes was undertaken.

So fruitful was the application of these scientific methods that agriculture was able successfully to withstand the repeal of the Corn Laws in 1846. The Corn Laws were passed in 1816 after the Napoleonic Wars in order to keep up the price of corn by imposing a heavy duty on imports. The landlords thrived on their high rents, but the mass of the people was in sore distress, for the pressure of the industrial population on food supplies was against their interests but in favour of that of the farmers. The antagonism between Town and Country, to be discerned so clearly in our own day, was in being.

By 1815 the large enclosed farm had become the normal unit of organisation in British agriculture. The wars had hastened the disappearance of the smallholders. A series of bad years at the close of the eighteenth and at the beginning of the nineteenth century caused a problem aggravated by the conditions of the war. Marginal land was brought into cultivation in response to the rise in prices. But the wages of labourers remained low; the Speenhamland system, by which relief was granted to the distressed agricultural labourers to supplement their income, was a scheme leading to the pauperisation of the agricultural labourer, for the relief depended upon the price of wheat and the size of the labourer's family. Between 1795 and 1833 this vicious system spread throughout England and Wales; it came to an end only as the result of the investigations of the Poor Law Commission of 1834.

The new middle classes, the industrialists, supported the anti-Corn-Law agitation, not so much because they loved the workers—they were soon to join forces with the landlord-aristocratic class in forming a new class of wealth and power in the political field—but because they did not relish the idea of paying high wages to enable the workers the better to support life. By the efforts of liberal-minded people like Cobden, the Corn Laws were repealed.

The lowness of the wages of agricultural labourers was a

factor in the sustaining of the prosperity of British agriculture in spite of the repeal of the Corn Laws. To a great extent, this prosperity was due to the increased efficiency resulting from the application of science to agriculture and to the high demand for the products of the industry; but the low wages of the labourers were a factor in the low costs. In point of fact, the Corn Laws kept up the rents of farms—rents which many farmers could not feel justified in paying if their farming was to be anything more than a speculator's gamble. The nation was not getting the food which was the *raison d'être* of the farming industry, and a wise Prime Minister, Sir Robert Peel, repealed the Corn Laws in 1846 in spite of the fact that his Ministry was in favour of protection; after resigning on the matter he was once more called upon to take up office, and thereupon took the step so necessary to the country's welfare. By this time the railways were opening up markets at home and making it easier for the farmer to obtain tools and machines and raw materials.

3. The Nineteenth-century Depression in Agriculture

It was the improvement in means of communication and the application of engineering to agriculture which, indeed, led to the end of the thirty golden years British agriculture enjoyed after 1840. The great wide open spaces of America became transformed into vast wheat-producing areas; agriculture on a large scale, and with correspondingly low costs, resulted in British farming feeling the cold draught of competition: wheat prices were reduced by 60 per cent. Cheap wheat came from the United States in the seventies and from Canada in the eighties; and it came also from Australia, Argentina, India and Russia. The invention of refrigerating processes enabled the Argentine to send Britain chilled beef, and Australia and New Zealand to send frozen mutton. The British farmers, too, suffered from poor harvests in the last quarter of the century; and disease amongst the stock was so alarming as to call forth legislation in the form of the Contagious Diseases (Animals) Act of 1878.

Prices fell—to some extent aided by a fall in the value of silver relative to gold, so that Indian produce could be obtained more cheaply. Rents fell; many farmers became bankrupt; land went out of cultivation. Many of the best agricultural labourers migrated to the towns. The labourers who remained demanded higher wages through the Agricultural Labourers' Union, founded in 1872 by Joseph Arch.

Royal Commissions considered the problem presented to the agricultural industry; the Eversley Commission of 1893–97 thought that the best hope of the farmers lay in the direction of market gardening and dairy farming, fruit and flower growing. Farmers took the hint, or had already taken it. British farming adapted itself to the new conditions; the British climate is suited to dairy farming, and the markets for the products of market gardening lay in the large towns. Farmers raised pedigree cattle and sold them profitably to the Argentine, and English meat was regarded as superior to imported meat. But labour continued to be scarce—the “rural exodus” continued.

In an attempt to revive a class of small cultivators, in 1892 the Government empowered county councils to provide small holdings on advantageous terms, and compelled them to do so under the Small Holdings and Allotments Act of 1908, the Board of Agriculture being given powers to intervene if the county councils proved recalcitrant. But these efforts met with little success; some thousands of small holdings (10–50 acres) were in fact provided; but less than one-third of the holders was drawn from those formerly employed in agriculture—the exodus of farm labourers to the towns continued. Up to the outbreak of the First World War in 1914 British agriculture continued to remain in the doldrums.

4. British Agriculture from 1914

The outbreak of war brought with it, of course, the menace of a shortage of food: a menace which was met by the negative method of seeking decreased consumption and the positive

method of encouraging the growing of more food. The Corn Production Act, 1917, guaranteed a minimum price for wheat and oats and a minimum rate for agricultural wages. But the weakness of the British economy in its agricultural aspect was emphasised by the war; in spite of the British command of the seas—threatened, but by no means defeated, by the unrestricted U-boat warfare waged by the Germans—the food shortage remained acute. The call back to the land was an unsuccessful one. In the light of history the Small Holdings and Allotments Acts, 1908 to 1926, the Corn Production Acts, 1917 and 1920, the Agricultural Wages (Regulation) Act, 1924, seem faintly reminiscent of the legislation designed to keep the peasants on the manors in the Middle Ages, and of the laws directed against the first enclosures. Depression began in 1922 and reached a critical stage in 1927, when the acreage of ploughland in England and Wales had declined by some 700,000 acres and in Scotland by 20,000 acres since 1914.

The Government tried to meet the situation by giving agricultural credits. The Agricultural Credits Act, 1923, empowered the Ministry of Agriculture to form agricultural credit societies having as their object the making of advances to members for approved agricultural purposes. The Agricultural Credits Act, 1928, provided for the making of loans on the security of farming assets through a company formed out of public funds, the resources of which were increased by the Agricultural Development Act, 1939.

Subsequent legislation guaranteed prices and assured markets to farmers, to such a degree in recent years as to arouse some resentment on the part of the non-farming community. The gap between the prices paid to farmers for produce and the prices paid by the consumer has been a topic of perennial comment.

The marketing side of agricultural activity has, indeed, been the subject of important legislation. Although the aim of the State was to encourage producers to form their own organisations rather than to compel them to submit to Government direction, nevertheless the passing of the Agricultural Market-

ing Acts, 1931 and 1933, marked a stage of direct and comprehensive State intervention.

The 1931 Act gave producers powers to draw up marketing schemes and impose them on all producers concerned if a majority of two-thirds of registered producers accepted the proposals. A Hops Marketing Scheme, started in 1932, replaced selling by individual growers to brewers by a scheme of centralised selling by a Hops Marketing Board, which was given a complete monopoly of sales. Protection by a tariff ensured a success to the hops scheme not shared by schemes for other commodities.

The 1933 Act went farther than the 1931 Act. The State took powers to control output and imports; and the development of home production, where desirable, was encouraged. Marketing schemes were to be drawn up for particular products, either by the State or by the producers themselves.

An original scheme for milk marketing drawn up by the Re-organisation Commission of 1932 differed in many respects from that subsequently adopted: a Milk Marketing Board was formed representing all registered producers, and the milk produced became the property of the Board, which fixed prices paid by the distributors, though the latter were allowed to arrange their own contracts with the producers. The country was divided into eleven districts, the total sum realised by the sale of milk in each district being credited to a "regional Pool" and divided amongst the producers at the pool price for the district. Milk sold to manufacturers and for other than liquid consumption was sold at a lower price than that of liquid milk.

In 1954 Government control of the Milk Marketing Board came to an end. The production of milk was then 1,650 million gallons (80 per cent sold for liquid consumption) as compared with 1,100 million gallons before the Second World War.

A Pigs and Bacon Marketing Scheme came into operation in 1933; a Pigs Board, representative of producers, and a Bacon Board, representative of curers, together fixed the price to be paid for bacon pigs. Imports were restricted, and the prices

of fixed supplies to curers from the home market were controlled. The output of pigs exceeded the estimate, so that imports were further restricted; the British public persisted in preferring Danish bacon to British. By the time the Second World War broke out the Scheme had succeeded in increasing the home supply of bacon from one-seventh to one-quarter of the total consumption, at the cost of a higher price for imported bacon and ham.

A Potato Marketing Scheme came into operation in 1934, and proved a considerable success, especially in preventing large fluctuations in supply and in maintaining prices. Production and supplies were regulated by a Potato Marketing Board; imports were restricted, and the size of potatoes placed upon the market was regulated. Producers and merchants were registered: only registered producers and merchants could deal with one another.

Eggs and Poultry Schemes and Cattle and Sugar Beet Schemes were in preparation when the Second World War broke out. It was then that the serious state of British agriculture was again thrown into prominence. It has been estimated that before the war the British people were using the produce of two and a quarter acres per person. To feed 50 million people, about 30 million acres of crops and grassland were available, with about 17 million acres of "rough grazing". In 1939 an era of cheap imported food ended; former agricultural countries were becoming industrialised, and wanted their own produce to feed their growing industrial populations. On the outbreak of war the Government instituted a form of general direction of British agriculture, based on local self-government by agricultural committees, which has been continued into peace conditions. A National Agricultural Advisory Service was set up, giving farmers free advice. By 1951 the farmers had increased their output by 40 per cent above the pre-war figures.

Self-sufficiency in food production has, however, not been attained. Rising costs have acted as a discouragement to farmers. The gap between producers' and retailers' prices is still a harsh reality. The exodus of the farm labourer to the

towns continues all over the world. The future of British agriculture still remains an anxious question ; it may be that the answer will lie in greater mechanisation and the application of modern methods of organisation to the oldest of our industries.

CHAPTER VI

THE INDUSTRIAL REVOLUTION: III. THE REVOLUTION IN TRANSPORT AND COMMUNICATIONS

I. Roads

THE Romans had made good roads in Britain; but when they left the country the road system was neglected. Not much attention was paid to road-making or repair during the Middle Ages, and it was not until 1555 that the authorities realised that it was necessary to do something about public highways. In that year the Government of Mary Tudor passed a law declaring the parishes to be responsible for the roads lying within their boundaries; two surveyors appointed by the parishioners were to see that the repairs necessary were carried out. The law was only perfunctorily observed; and right up to the end of the seventeenth century the highroads continued to be unfenced tracks, impassable because of mud in wet weather, deeply rutted in summer. It was easier to travel by river; improvements in river facilities were in fact begun about 1650.

In the seventeenth century turnpike trusts came into existence. These were created with the idea that users of roads should pay for their upkeep: stretches of roads were controlled privately, and tolls were charged to those passing upon them. The system received a great impetus from the march of the Jacobites on London in 1745; after this alarm there was considerable activity in road construction for strategic reasons. The by-roads continued to be neglected; but by the end of the eighteenth century large towns were linked by main roads.

The end of the eighteenth century and the beginning of the nineteenth produced three great road engineers, who built up

the technical knowledge so lacking in earlier times. Thomas Telford (1757-1834) demonstrated the importance of a good foundation; besides achievements in canal-making and bridge-building (*e.g.* the Menai Suspension Bridge), he built many hundreds of miles of road in Scotland and the north of England. John Metcalf (1717-1810), called "Blind Jack of Knaresborough", also built stretches of road in the north of England. John McAdam (1756-1836) gave the language the word "macadamise"; he used rough angular fragments of stone of approximately equal size as a surface for the repair of roads; the slight camber caused wear and tear to be confined to the middle, so obviating the tendency to form ruts which the traffic tended to wear in the old, steeper-cambered roads.

In 1784 Palmer organised services of mail coaches for letters and passengers; and in the early nineteenth century posting-houses and the system of horse relays enabled a fast mail-coach, averaging about twelve miles an hour, to travel from (*e.g.*) London to Bath in one day. Between 1827 and 1840 steam road-carriages were in use, but the heavy tolls discouraged them. In the thirties the railways provided serious competition.

The Local Government Act of 1888 made the local authorities (the county councils and boroughs) the responsible authorities for roads. The Local Government Act of 1929 divided the roads into "county roads" and "ordinary highways" and into "classified" and "unclassified" roads, and transferred the functions of Government Departments concerning roads to the Minister of Transport. The Trunk Roads Act of 1936 introduced the category of "trunk roads", comprising the principal roads in Britain except for roads within the County of London or within any county borough, and the Ministry of Transport became responsible for them. The total mileage of trunk roads in Britain is now about 4,500, and the total mileage of public roads generally is over 180,000, about half of them being classified by the Ministry of Transport in Classes I, II, and III. In 1914-15 the cost of new constructions, repair and improvement was nearly £19 million; in 1938 the figure was £68 million. The habit on the part of successive Governments of dipping into the fund produced by

the road tax for the purposes of meeting general Government expenditure, has contributed to the present unsatisfactory state of the roads in Britain. In Germany *autobahnen* were constructed for motor transport, in long stretches and with specially designed crossings. In the United States, trunk roads designed to carry heavy, fast-moving traffic have been developed.

The roads of Britain belong, in fact, to an earlier if pleasanter age; nevertheless, the coming of road transport provided the railways with a pretty problem. In the nineteen-thirties the competition of road-transport services was causing them such acute uneasiness that they obtained powers to run road-transport undertakings and to acquire financial interests in omnibus undertakings. In 1933 the four main lines had acquired a controlling interest in Carter Paterson's and Pickford's, the two great road-haulage firms; and by 1935 the railways had invested over £8 million in omnibus undertakings.

The losses in traffic receipts due to road competition led the railways to agitate for a "square deal". In 1932 the Salter Committee on Rail and Road Transport was appointed, and the recommendations of this Committee were largely followed in the framing of the Road and Rail Traffic Act, 1933. Part I of the Act dealt with road transport: in future licences (additional to the Road Fund licences) were to be obtained by persons using a mechanically driven vehicle to carry goods by road; particulars of an applicant's business and rates charged were to be given to the Ministry of Transport, which was also empowered to regulate the hours of work of employees and to inspect vehicles to see that they were kept in a fit and serviceable condition; licence-holders were obliged to keep a record of hours of work of employees and of journeys done. Part II of the Act extended the powers of the railways to quote competitive rates; Part III provided for the setting up of a Transport Advisory Council to advise the Minister of Transport in the co-ordination of transport facilities. The general effect of the Act was to strengthen the position of the railways as against the road-transport undertakings.

The Transport Act of 1947, which nationalised the railways,

also nationalised British long-distance road-haulage services. But the Transport Act, 1953, had as its main provision the denationalisation of the road-haulage business conducted by the British Transport Commission through the Road Haulage Executive by virtue of the Transport Act, 1947. By the 1953 Act the British Transport Commission was required to dispose by sale of its road-haulage property held through the Road Haulage Executive. The Commission was still left free to provide, continue and develop services for road carriage otherwise than as a part of the operation of the existing road-haulage undertaking.

The 1953 Act provided, also, as from the end of 1954, for the repeal of Section 52 of the Transport Act, 1947, restricting the use of goods vehicles more than 25 miles from the operating centre. This provision of the 1947 Act had been greatly resented by private enterprise.

Attempts to sell the road-haulage property of the British Transport Commission were not very successful. In the up-shot, certain trunk services were retained by the British Transport Commission; and the situation has become one in which British Road Services operate in competition with private enterprise.

The roads themselves were by 1953 in sad need of repair and extension. They had been starved of capital expenditure: between 1948 and 1953 the roads were allocated only about £40 million, compared with the railways' £200 million, the £1,000 million of electricity, gas and coal, and the £2,200 million of the manufacturing industries. Road accidents cost the country £150 million a year; and it has been estimated that the inadequacies of the road system cost industry £60 million a year.

Plans for road improvements announced by the Government in December, 1953, were denounced generally as inadequate. In February, 1955, the Government authorised a four-year road-improvement plan at a cost of £147 million; in July, 1955, it was announced that 345 miles of modern motorways would be built in the next five to eight years, at an estimated cost of £85 million, or a quarter of a million pounds per mile.

In September, 1955, plans were published showing the proposed line of the first 53 miles of the London—Yorkshire motorway, the first British *autobahn*, for the exclusive use of motor traffic. This stretch of M1 was opened in 1959.

2. Canals and Inland Waterways

In the early years of the Industrial Revolution the possibilities of canals and inland waterways were not overlooked by those seeking means of distributing goods and obtaining raw materials: a horse pulls about 40 tons by water as compared with 2 tons by road. Work on the improvement of rivers, by the provision of locks and weirs and towpaths, began about 1650; and by the middle of the eighteenth century all the main rivers had been made navigable for considerable distances: *e.g.* the Severn to Welshpool, the rivers of Yorkshire to Ripon and Leeds.

In 1762–72 the Bridgewater Canal to carry coal from Worsley to Manchester was constructed as a result of the application of the genius of Brindley, the engineer; the success of this venture resulted in the halving of the price of coal in Manchester. A second canal was constructed by Brindley in 1773 to carry the Manchester, Runcorn and Liverpool traffic. The Duke of Bridgewater had to go to London for his funds, and the scheme cost £220,000; but by 1792 it was paying over 35 per cent in dividends, and the transport rate was 6s. per ton as compared with 12s. per ton by river.

There followed a great era in canal-building with the improvement of waterways and the linking of river to river by canal. In 1777 Brindley constructed the Trent and Mersey Canal, giving “trunk” navigation from Hull to Liverpool, and assisting in the development of the Potteries district; transport costs were reduced by about three-quarters.

For a few years at the end of the eighteenth century, there was a “canal mania”. Canals were made all over the country. Many of them were useful aids in the development of the Industrial Revolution of the eighteenth century. Many others were promoted at the instance of the ever-present scourge—the unscrupulous and predatory speculative pro-

motor; many were planned as the result of misplaced and unforeseeing enthusiasm. The spirit of independence and sturdy if misjudged self-reliance which has characterised so much of British industry resulted in the building of numerous unco-ordinated canals, without facilities for transference. They suffered from congestion at some times and lack of cargoes to make up loads at others; inadequate protection of goods from pilfering; an excessive number of locks; and a too narrow gauge, resulting in too slow a speed.

It is not to be wondered that these defects of the canals made the competing railways more attractive to merchants and industrialists. When the railways came, the railway companies bought up many canals, and in effect closed them. In non-industrial districts one comes across neglected canals blossoming with water-loving flowers, the haunts of water-fowl.

Of the total canal mileage of 3,639 in England and Wales, 183 in Scotland and 848 in Ireland, 1,360 miles were controlled by the railways before nationalisation; of the 17 million tons carried by the canals in 1938, $1\frac{1}{2}$ million tons were carried by the railway-owned canals; of the other canals, the Manchester Ship Canal carried over 6 million tons, the Aire and Calder and Birmingham carried over 2 million tons each, and the Grand Union, the Lea Navigation, the Leeds and Liverpool and the Bridgewater over a million tons each.

About 2,500 miles of canals are still in use. During the Second World War a Central Canal Committee was set up by the Minister of War Transport to advise him on questions of policy regarding inland waters and to co-ordinate the work of six Regional Canal Committees which were reconstituted in order to ensure the most efficient operation of the canals. Under the Transport Act of 1947, management of docks and canals was allocated to a Docks and Inland Waterways Executive, one of the six executives appointed by the Minister of Transport in consultation with the British Transport Commission. The canals were organised into five areas, excluding the Manchester Ship Canal, the Bridgewater and the Thames Conservancy.

Canal transport has never been as popular in this country

as it has been in Continental countries, particularly Belgium. The physical features in general do not invite canal development. Nevertheless, the search for the best uses of our resources continues. A February, 1959, White Paper announced that an Advisory Committee was to be appointed.

3. Railways

Britain's leadership in the Industrial Revolution entailed the disadvantage that the country had to feel its way by trial and error and make mistakes which were necessarily costly, and which could be avoided by other countries following the more pleasing method of profiting by somebody else's experience. This was especially true of railways: the surveys; the submission of evidence to Parliamentary Committees; the purchase of land; the lack of Government co-ordination and the discouragement of amalgamation; the building of duplicate rival lines; all helped to make the cost of building British railways extremely high, and it has been estimated that the cost of preliminary proceedings alone was as much as £4,000 per mile of line built. Britain paid about £55,000 per mile in all, as against £22,000 in Germany and even less in the United States.

In the initial stages of development the design of railways and locomotives was not co-ordinated. Wooden and then iron tramways were used in the early years of the nineteenth century to link collieries with towns and canals, the trucks being drawn by horses. Murdock, Trevithick and others made locomotives for use on the roads. In 1825 the first public line intended for use with locomotives was opened: the Stockton and Darlington Railway; but the passenger-coaches were to be drawn by horses. Coal shipments at Stockton increased from under 11,000 to 1½ million tons; and the possibilities of the new means of transport became apparent. In 1830 the Liverpool and Manchester Railway was opened; it was the first railway to enter into direct competition with the canals, which had proved themselves inadequate for the traffic. Stephenson's "Rocket" reached 35 m.p.h.; the

cost of transport between Liverpool and Manchester was reduced by one-third, and the time saved was very considerable.

The canal companies and turnpike trusts viewed this new rivalry with apprehension; but theirs was not the only opposition. The conviction that railways spelt the ruination of their estates, combined with natural cupidity, induced the landlords to charge exorbitant prices for their land. Fear of

1825	First public line—STOCKTON AND DARLINGTON RAILWAY.
1830	LIVERPOOL AND MANCHESTER RAILWAY—the first railway to enter into direct competition with the CANALS.
1840s	RAILWAY "MANIA".
	George Hudson—the "Railway King".
1847	Establishment of Railway Clearing House (Amalgamations).
1854	Cardwell's Act.
	MAIN LINES LAID DOWN BY 1870.
	DEVELOPMENT OF STATE CONTROL.
1873	Establishment of Railway and Canal Commission—re-constituted 1888.
	Parliament fixes Rates.
	Amalgamations and Working Agreements.
1890s	Movement towards Nationalisation.
1911	Railway Strike.
1913	Formation of National Union of Railwaymen.
1914-18	FIRST WORLD WAR.
1919	Establishment of Ministry of Transport.
1921	Railways Act—RAILWAYS COMBINED INTO FOUR GROUPS.
	COMPETITION OF ROAD TRANSPORT.
1932	Salter Committee.
1933	Road and Rail Traffic Act.
1939-45	SECOND WORLD WAR.
1947	TRANSPORT ACT—Nationalisation of Railways.
1953	TRANSPORT ACT.

CHART 5.—LANDMARKS IN BRITISH RAILWAY HISTORY.

the admittedly fearsome monsters which the railway companies proposed to let loose on the country, together with the innate conservatism of most people, resulted in opposition from the public. One beneficent result of the public apprehension was that the railway companies constructed the tracks with special attention to safety, but this increased the cost, as did the efforts of Parliament, which controlled without encouraging: it was necessary to bring a Bill before Parliament in promoting a railway.

By 1840 the methods of future development had been worked out; it had been discovered that the original plan of providing the track and charging a toll to the users for permission to place a vehicle upon it was not workable. Neither was the idea that horse-drawn and locomotive-drawn traffic could share the same track. The extent of the demand for passenger transport was, too, a pleasant surprise; indeed, for some years the greater part of the revenue was drawn from passenger traffic, the canals continuing to carry bulky raw material.

So profitable did the new means of transport appear that a "railway mania" occurred in the eighteen-forties: a mania with which the name of George Hudson, the "Railway King", is associated. The economies of large-scale amalgamation were too obvious to be ignored. In 1847 a Railway Clearing House was established for the adjustment of claims between companies relating to the use of one another's lines and the interchange of traffic. In 1846 Parliament directed that a standard gauge (the distance between the rails) should be adopted. Over-enthusiasm and desire to make money brought about a crisis in 1847-48 which brought Hudson down.

The trend towards amalgamation was viewed by Parliament with considerable alarm; this was the era of *laissez-faire*. Nevertheless, it must be conceded that Parliament was also concerned with the question of the power which would be attained by unrestrained giant combines controlling the transport ways of the country. Commissions of enquiry were instituted. In 1854 Cardwell's Act (the Railway and Canal Traffic Act) directed the railways to provide facilities for through traffic, and forbade the giving of undue preferences, *i.e.* the preferring of one customer to another; already, in 1845, Parliament had fixed maximum rates for the carriage of goods.

But stronger action was needed if real control was to be effected. The companies could fix what rates they liked, subject to the maxima imposed, and preferences could be given in various devious ways. The *laissez-faire* system of

ideas competed with the realisation that if control was to be undertaken by Parliament at all, it had to be effective. In 1873 a Railway and Canal Commission was established; and this was reconstituted and made permanent in 1888. Its functions were to determine reasonable rates, to examine proposed amalgamations and sanction the buying up of canals, and to enforce the law regarding preferences.

The main lines of the country's railways had been laid a quarter of a century before; by 1870 13,000 miles had been built; and after 1885, when the mileage was 16,700, the additions were mainly branch lines. The maintenance of the *laissez-faire* attitude and the reluctance to sanction amalgamations were, therefore, the contributory factors in a situation where any planning the Government felt called upon to do had to be done in the face of an accomplished fact which it was exceedingly hard to change—there are few things so little susceptible to political manipulation as a complete railway system.

The Government did its best. In 1888 the Railway and Canal Traffic Act provided for a revised and uniform classification of rates; and a new schedule came into operation in 1893. Thereupon, the companies raised their rates to the permitted maximum. Parliament retaliated by passing, in 1894, an Act which limited the rates to those in force in 1892. This begins the era, continued to our own day, when increases in rates stated to be necessary to maintain solvency have provoked a public outcry, followed by protestations on the part of the railway authorities that increases are necessary. The position in 1894 was that traders were able to appeal to the Railway and Canal Commission against increases they regarded as unreasonable. The companies therefore found it difficult to raise their rates; but they were also wary of lowering them, since it might be held that subsequent increases were unnecessary and unreasonable.

Improvements in passengers' comfort now became the basis of competition between the companies, and their working costs rose. The inevitable result was a more pronounced tendency towards amalgamations and working agreements.

Parliament was still distrustful of this movement; and, in 1909, refused to sanction a combine of the Great Northern, Great Eastern and Great Central Railways: the answer of the railways was, of course, informal agreements. The general public again began to be apprehensive of the formation of a great railway monopoly. So were the railway employees, who found the Conciliation Boards, set up by the Board of Trade after unrest in 1907, unsatisfactory; there was a strike in 1911, and the National Union of Railwaymen was formed in 1913.

Nationalisation was a remedy suggested in many quarters, but the Government seemed reluctant to take this step. The outbreak of the First World War in 1914 forced the Government's hand: the Government took control of the railways and guaranteed dividends.

After the war, in 1919, a Ministry of Transport, with extensive powers over the regulation of rates and charges, was set up. It was believed by some people that the time was now ripe for nationalisation; but still the Government held its hand: a compromise was in fact effected. By the Railways Act of 1921, the Government handed back the railways to private control; but the 121 railway companies, apart from the London electric and underground railways, were combined into four groups: the Southern; the Great Western; the London, Midland and Scottish; and the London and North Eastern Railways. The Minister of Transport was given powers to enforce measures leading to the standardisation of ways, plant and equipment; a Railway Rates Tribunal was set up to fix fares, rates and charges; and permanent wages boards were established. The Railway Rates Tribunal sanctioned rates which came into operation on the 1st January, 1928; the General Railway Classification of Merchandise set out the standard schedules of charges for the carriage of commodities.

The story of the increasing competition of road transport has already been told. Meantime, arrangements were being made to deal with the possibility of industrial disputes in the railway scene. Failure to reach agreement in a dispute was to result in a reference to a Central Wages Board, composed

of representatives of the companies, the National Union of Railwaymen, the Amalgamated Society of Locomotive Engineers and Firemen, and the Railway Clerks' Association. An appeal could be made to the National Wages Board, containing representatives of the companies, the unions and the users, *e.g.* the Association of British Chambers of Commerce; an independent chairman was to be nominated by the Minister of Labour. In 1935 the Railway Staff National Council, consisting of representatives of the companies and the unions, superseded the Central Wages Board; a reference on any point not agreed upon was to be referred to a Railway Staff National Tribunal, whose decision was not to be legally binding, but the existence of which held up a strike or lock-out until the Tribunal investigated the matter.

The coming of the Second World War meant that the Government again took charge of the railways; the Government paid a fixed rental to the companies of about £43½ million. The peak revenue year of the war period was in 1942, when the Government's share of the revenue pool was about £66 million. By 1945 there was a considerable drop.

The prospect of nationalisation was not looked upon very favourably by the boards of the companies. The request for a "square deal" in relation to road transport was brought up again. By this time the railways had substantial interests in motor-omnibus and carrier companies, and were showing a considerable interest in air-transport development. The four main-line companies had interests in sixteen air companies, five of them operating services; and they appointed an air adviser in 1943. The war years naturally caused rapid depreciation of railway assets; by the time peace came it was estimated that about £100 million would be required for deferred maintenance and renewals alone.

It was perhaps inevitable that when a Labour Government came into power in 1945 the railways should be nationalised. The Transport Act, 1947, gave power over all forms of inland transport, except air transport, to the British Transport Commission, responsible to the Minister of Transport. The management of the various forms of transport was entrusted

to Executives appointed to run: (1) railways; (2) docks and canals; (3) road-haulage undertakings, except for certain short-distance undertakings; (4) London passenger transport; (5) railway hotels. To the Railway Executive passed, on the 1st January, 1948, responsibility for the administration, maintenance and operation of British Railways, the Railway Executive having the status of a public authority dealing with the public, employing the staff and entering into contracts. The members of the Railway Executive were to be appointed by the Minister of Transport in consultation with the Transport Commission. A Transport Tribunal took the place of the Railway Rates Tribunal.

The Transport Act, 1953, required the reorganisation of the railways. Within twelve months of the passing of the Act (which received the Royal Assent on the 6th May, 1953), or such longer period as the Minister may allow, the British Transport Commission is required to submit to the Minister a scheme for the reorganisation of the railways, which must provide for the abolition of the Railway Executive and for the delegation of functions to new area authorities. The Scheme to be submitted need not include all the Commissioners' functions relating to the operation of the railways, and in particular it need not deal with the passenger services provided by the London Transport Executive.

The Act has amended the powers and duties of the Commission in certain important respects. Its general duty, as has now been laid down, is to provide or secure the provision of "an adequate and properly co-ordinated system of passenger transport for the London Passenger Transport Area, to provide in such places and to such extent as may appear to them to be expedient, other transport services, facilities for traffic on inland waterways, and port facilities (if in such places they were, on the 1st July, 1952, either providing port facilities or were specifically empowered to so do), due regard being had to efficiency, economy and safety of operation and to the needs of the public, agriculture, commerce and industry".*

Those sections of the Transport Act, 1947, which provided

* Statement by the British Transport Commission.

for the making of schemes for road-passenger transport services are repealed, so that the eventual nationalisation of municipal passenger transport is no longer envisaged. The Commission is not required to provide port facilities where it was not already doing so or had power to do so.

The organisation of British rail transport is in process of modification to meet modern conditions. In January, 1955, the British Transport Commission published a fifteen-year plan estimated to cost £1,200 million, but since re-assessed at £1,500 owing to rising price levels. The main features of the plan include electrification of certain main lines; the building of diesel locomotives and multiple-coach diesel units for branch and cross-country lines; the improvement of track and signalling to allow main line speeds of up to 100 miles per hour; the speeding of goods trains, with improved safety devices; the rebuilding of stations; and the cleaning-up of carriages. A great extension of suburban electrification is envisaged. Of the £1,500 million required, two-thirds will be borrowed; the other one-third will be provided from depreciation provisions. A re-appraisal of the programme was completed in 1959, and published as a Government White Paper (Cmd. 813). As a result, modernisation is being accelerated to improve railway finances as quickly as possible. Much of the programme, including the introduction of diesel traction and some suburban electrification schemes, is expected to be accomplished by 1963. It is hoped that by about 1964 the British Transport Commission will have a substantial working surplus; but to ensure stability in the longer term, the financial structure of the Commission must receive fresh consideration.

4. Sea and Air Transport

The repeal of the Navigation Acts in 1849 and the freeing of the coastal trade in 1854 have already been commented upon.* In the early nineteenth century the first engines for water travel made their appearance—the Atlantic was crossed by a steamship, the *Savannah*, in 1819. The earliest steamships were sailing vessels fitted with engines and paddle-

* See p. 26.

wheels; and, indeed, sailing ships formed the great bulk of British shipping right up to the 1860s. Iron replaced wood, and soon after the middle of the nineteenth century the clipper ships which raced one another across the seas with cargoes from China and Australia were fitted with iron hulls, which were lighter than wood because of their comparative thinness, and which were stronger, cheaper to build, more watertight and gave more cargo space. In the last quarter of the century steel began to replace iron; the advances in the techniques of production enabled steel to be produced much more cheaply. Thus steel ships took the place of iron ones.

It was in the 1850s that steamships began seriously to compete with sailing vessels; the inventions of the screw, the compound engine and tubular boilers, gave more power for less fuel. Engines were improved; the steam-turbine engine, using the principle of the pressure of a steam jet on the blades of the propeller, was invented by Sir Charles Parsons in 1884. The opening of the Suez Canal in 1869 gave a decisive advantage to the steamships; coaling-stations were set up at Port Said and Aden, shortening the Far East route, with consequent saving of time and fuel.

Britain built up the largest mercantile marine in the world. The American supplies of coal and iron were not so conveniently situated for iron and steel shipbuilding; and in the Civil War of 1861-65 the Americans lost a considerable amount of merchant shipping. The payments for shipping services earned by the British mercantile fleet helped to make up the deficit on the visible trade balance of Britain with the rest of the world; the net national shipping income just before the outbreak of the Second World War was about £100 million.

Private enterprise built up Britain's shipping as it had built up Britain's industrial supremacy; but it brought with it the consequences of that selfishness and ruthlessness which inevitably give rise to State control. Vessels were sent to sea in an unseaworthy condition, undermanned, a danger to the crew. Samuel Plimsoll, a Member of Parliament, devoted his energies to an attack on the evil of the "coffin ships". The Board of Trade, already conducting examinations for Master's

and Mate's certificates by the middle of the century, had inadequate powers. A Royal Commission was appointed, but the Government was not over-eager to act until public opinion, roused by Plimsoll's activities, forced it to do so. The Merchant Shipping Acts of 1875 and 1876 imposed penalties on shipowners who sent their ships to sea in an unseaworthy condition, limited deck cargoes, and established a load-line—the "Plimsoll Line". The Merchant Shipping Act, 1894, amended by subsequent legislation, codified the law relating to the liability of shipowners. After the loss of the *Titanic* in 1912 the regulations relating to the safety of crew and passengers at sea were tightened.

The British Merchant Navy expanded from 4 million tons in the middle of the nineteenth century to 12 million tons by 1913; and British overseas trade expanded correspondingly. The advantages which Great Britain enjoyed—her diversified industrial activities, her cheap coal, her already sound establishment as a world carrier, the policy of Free Trade which enabled her shipbuilders to obtain materials cheaply—combined to cause her to outstrip the Continental countries and the United States. In 1892-94 she was building four-fifths of the total gross tonnage of merchant shipping launched; at this time iron had been superseded by steel in ship construction, and Britain's supremacy in metallurgical science was enjoying full play. Subsidised foreign competition then began to affect British interests adversely, so that the proportion of shipping built by Britain declined; but in the years immediately before the First World War, the tonnage built by Britain had recovered to 61 per cent of the world total.

In the last quarter of the nineteenth century the shipping companies, faced with depression and competition, formed combinations. Depression had come about through the building of tonnage in excess of that required for world trade; it was met, in some cases, by amalgamations; in others, by "conferences"; the latter were associations of companies laying down tariffs of freights and agreeing upon "territories" for their liners. The monopolistic nature of such conferences caused legislative action to be taken against them when they

were adopted in the United States and Australia. Another device was the deferred rebate system, by which individual shippers promised loyalty to companies in return for rebates.

Britain lost 8 million gross tons of shipping through enemy action during the First World War; and the depression of 1929-32 reduced her proportion of world tonnage to 32 per cent by 1935. After the war the shipping of other nations was heavily subsidised. The consequence of the unequal struggle was that British earnings for shipping services declined rapidly, and many companies were faced not merely with a low yield for the capital invested, but with actual losses. By 1932 the volume of British shipping lying idle was over 2 million tons, a figure subsequently reduced by sales for breaking-up and by sales to foreign buyers—the latter hardly a method of reducing foreign competition.

The British Government met subsidy by subsidy—an annual subsidy, of a maximum of £2 million for 1934, being promised to the tramp-shipping industry on condition that it evolved a scheme to prevent the dissipation of the subsidy through domestic competition, and to ensure the greater employment of British shipping. A scheme was evolved by the British Tramp Shipping Committee; and an International Committee was formed in 1935. This Committee put into operation a scheme of minimum freight rates; rates began to rise in 1936, and eventually again reached the 1929 level; the subsidy was renewed each year up to 1937.

In spite of the difficulties experienced, British ships were carrying in 1939 over 40 per cent of the world's overseas trade, between 60 and 70 per cent of the trade between the United Kingdom and the rest of the world, and over 90 per cent of the trade between the United Kingdom and the British Empire.

During the Second World War the British Government took over merchant shipping, paying a rental which did not include a contribution for replacement or obsolescence. In the war over 11 million gross tons (to 1945) were lost to the British Empire by enemy action; by 1948, however, these losses had been replaced: Britain then possessed 22 per cent (18 million) of world tonnage, coming second to the United

States, which possessed 36 per cent (nearly 30 million tons). Britain's tonnage, indeed, was higher than in 1939; but the United States had increased her tonnage in much greater proportion. In 1958, Britain's share was 25 per cent.

In the nineteen-forties the shipping concerns were not anxious to receive subsidies from the Government; and they certainly were not in favour of nationalisation; the Annual Report of the Liverpool Steam Ship Owners' Association for 1943 pointed out that experiments in nationalised shipping made in the United States and in Australia had ended disastrously.

It can be argued that the variety of changing conditions in the shipping industry calls for individual enterprise rather than State organisation. The constant need for close supervision in home and foreign ports, and the selection of the right type of vessel for a given cargo in a given trade are, it is held, qualities which the State type of enterprise cannot provide.

However this may be, the State has acted with alacrity in acquiring control in the modern and contrasting industry of air transport. The First World War, with its research and development of fighting weapons, gave an impetus to aviation; and between 1919 and 1936 the mileage of world air routes grew from 3,200 to 305,200. In 1925 Imperial Airways, Ltd., was formed; it was granted a Government subsidy to develop British air routes overseas. Its air-transport undertakings were acquired on the 1st April, 1940, by British Overseas Airways Corporation, one of the three statutory Corporations established to operate: (1) the United Kingdom-Commonwealth, United States and Far East routes (British Overseas Airways); (2) the internal and United Kingdom-Continent routes (British European Airways); (3) the United Kingdom-South America and West Indies routes (British South American Airways—the England-S. America services were later abandoned).

The privately-owned American companies have apparently run their lines more economically than the British corporations. The British have, however, operated aircraft services for prestige rather than purely commercial purposes, and have conducted costly experiments. It must be added, however,

that recent developments in European services have enabled passenger fares to come down to a level comparing not unfavourably with railway fares.

The variety of considerations involved, including those of design and development for other than commercial reasons, and the rapid march of progress in air transport in modern times, prevent us gaining as yet an adequate historical perspective of the problem of air transport.

5. Communications

Postal services were in operation in most European countries by the beginning of the eighteenth century; but the services were necessarily slow and costly. In 1666-67 it took thirty hours for mail to pass between London and Bristol; and between London and Edinburgh the time taken was up to 100 hours. It was in 1837 that Rowland Hill, appreciating that distance added little to the cost of sending letters, proposed a standard charge, and the Penny Post came into being in 1840. In 1875 an International Postal Convention was signed at Berne; and it is now possible to send letters all over the world by merely affixing the necessary stamps.

Telegraphy became a practical proposition in the eighteenth-thirties, and wireless-telegraphy at the end of the century. Ships were equipped with wireless apparatus; the public imagination was fired when, in 1910, a murderer, Dr. Crippen, was apprehended in America by detectives apprised of his identity by the captain of the ship in which he was travelling from England.

The transmission of speech was successfully accomplished before the end of the First World War. The British Broadcasting Company, Ltd., was formed in 1922, and the British Broadcasting Corporation in 1927. And so began the era of the babble of voices in the ether, the strenuous propaganda and counter-propaganda of nations and, in some countries, commercial advertising. Television came to the fore; and in 1953 much controversy was raised in Britain by the Government's proposals to establish an alternative television programme to that conducted by the B.B.C.

Printing in Britain remained a handicraft from the time William Caxton started work in London in 1476 until the nineteenth century. In 1814 *The Times* initiated power printing. Thereafter, power printing developed rapidly, and printing techniques interacted with the social revolution caused by the implementing of the Education Act of 1870, making elementary education compulsory. Alfred Harmsworth, later Lord Northcliffe, was the founder of the "new journalism" of the closing years of the nineteenth century and the opening years of the twentieth; in 1896 he launched the *Daily Mail*; in 1904, by which time the opinions of women in political and current affairs had come to matter to the wielders of power, he began the *Daily Mirror* as a cheap women's paper.

Soon a large part of the London and provincial Press had become the property of several large combines, which endeavoured, often with success, to influence popular thought. The opportunities for commercial advertising in the popular Press are too well known to require more than a passing comment in this work. It must not be forgotten, however, that advertising may be good or bad; and that the same forces making for harmful influence are equally available to make known the products of responsible undertakings and to render possible the production of comparatively cheap but worth-while literature. Modern industrial organisation, with its special departments devoted to publicity, depends for its own existence ultimately on the efficiency of communication not only for distributing products and obtaining raw material, but also for disseminating information whereby consumers are made aware of specific firms, their products and the suggested suitability of these products to consumers' special needs. Ultimately, too, the power of the Press is reducible to the power of the members of the community willing to support it: that power partakes of the quality of the individual persons who possess it.

CHAPTER VII

FINANCIAL ORGANISATION AND THE REVOLUTION IN BANKING

I. The Rise of the Joint-stock Limited Liability Company

IT has been stated that the pricking of the "South Sea Bubble" led to the "Bubble Act" of 1720 by which new companies had to obtain a charter from the Crown or be formed under a special Act of Parliament.* This Act was repealed in 1825; and in 1844 incorporation of a company without a charter or special Act was made possible.

The expansion of the opportunities for profitable investment, the large amounts of capital accumulated through commercial enterprise, the new techniques calling for the use of a considerable amount of loan capital, made inevitable the invention of financial machinery to enable those who had money to invest without possessing technical knowledge, and those who had the technical knowledge and business ability, to pool their resources to the advantage of both. The possibility of finding himself liable for the whole debts of a business undertaking, the working of which he had but a hazy understanding, could not fail to deter anybody interested in the apparently limitless possibilities of industrial development displayed as the Industrial Revolution proceeded.

In the earlier common-law joint-stock companies the members were responsible for the debts of the company as a whole. They were unincorporated, and the liability of the members was unlimited. Not until 1855 did Parliament pass an Act legalising the principle of limited liability; in that year limited liability was introduced for shares of not less than £10. In 1862 this limit was removed.

* See p. 30.

The principle of limited liability has been of the utmost importance in the evolution of modern industrial organisation. Limited liability means that the liability of an individual member of a joint-stock limited-liability company is limited to the amount of share capital which he has undertaken to subscribe: a person who takes up shares of the value of £50 is liable only for this amount; and once his shares are fully

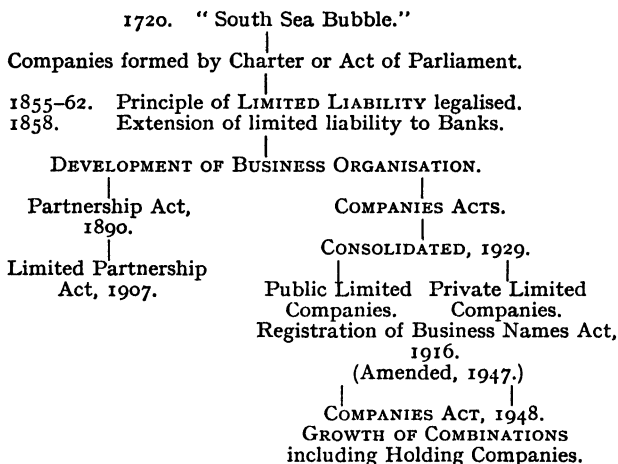


CHART 6.—THE DEVELOPMENT OF LEGAL FORMS IN BUSINESS ORGANISATION.

paid up, he cannot be called upon to contribute more in the paying-off of a company's debts if the company goes into liquidation. The company is a corporate body, *i.e.* it is a legal entity in the eyes of the law, separate and distinct from the members who compose it, able to hold property and make contracts and sue and be sued just like an ordinary natural person, and with perpetual succession, so that although individual members may die or transfer their shares to somebody else, the company goes on. A public limited company may be formed with as few as seven members, and the public may be invited to subscribe for shares or debentures of the company.

It thus became possible for the general public to invest money in industry without fear of becoming involved in large debts; and the number of companies formed increased rapidly. To-day, the returns of the Registrar of Companies show that over 5,000 new companies are registered every year. By 1944 there were over 13,000 public companies in existence, with a total paid-up capital of over £3,800 million.

Previous legislation relating to companies was consolidated in the Companies Act, 1929. The Companies Act, 1948, consolidated the Companies Acts, 1929 and 1947 (other than the provisions of the 1947 Act relating to the registration of business names, bankruptcy, and the prevention of fraud in connection with unit trusts).

The principle of limited liability was applied to partnerships by the Limited Partnership Act, 1907 (legislation applied to ordinary partnerships had been codified in the Partnership Act, 1890). The 1907 Act created the limited partner, one whose liability extends only to the amount he has contributed to the partnership, but who is subject to various restrictions, of which the most important is that he is not allowed to take any active part in the conduct of the business; there must be one or more general partners, liable for all the debts of the firm, in a limited partnership. A limited partnership must be registered with the Registrar of Companies, or the firm will be regarded as an ordinary partnership in the eyes of the law. The disadvantages of a limited partnership have resulted in this type of organisation not being popular in Britain. All the advantages of a limited partnership, with none of the disadvantages, may be obtained by the formation of a private limited company, the minimum number of members of which is two, and the maximum fifty (excluding persons in the employment of the company and persons who have been formerly in the employment of the company, who were members while in that employment and who have continued to be members after the determination of their employment with the company).

A private limited company enjoys certain exemptions from obligations imposed by law on public limited companies; but

it prohibits any invitation to the public to subscribe for shares or debentures of the company, and it restricts the right to transfer its shares.

To compare the growth of private limited companies with that of public limited companies: in 1944 there were 169,205 private companies with a total paid-up capital of £1,935 million. In 1951 took place the 500,000th company registration in England and Wales since the coming into operation of the 1862 Act. In 1954, of the quarter of a million companies, only about 4 per cent. were public companies, but together they owned two-thirds of the total capital.

It is evident that the creation of such machinery for the legal organisation of business undertakings also created opportunities for unscrupulous and clever people to conduct activities of doubtful moral integrity while keeping within the letter of the law: there is, for example, the question of the "one-man" company. The Cohen Committee was set up to consider the question of company law amendment, and reported in 1945. The Companies Act, 1948, embodied some of the recommendations of this report.

A recent development is one by which the small investor may spread his investments over a large number of different securities, thus spreading his risk. This is done through an investment trust, a financial institution which divides its capital into units, each one of which, held as a share, represents investment in many companies. An American idea, coming to this country in the 1930s, was the fixed trust, which invests its capital in a definite group of shares, *e.g.* brewery or mining.

By such means industry is able to make use of small amounts of capital—small in themselves, but collectively forming a stream of loan capital which is of the utmost importance when joined with management, labour, fixed capital and enterprise. The nature of such small investment may be gauged from the information given in an advertisement, in 1953 in a national newspaper, addressed to the small investor: the unit trust advertising offered an opportunity to those investing as little as £20 to spread the risk over twenty-five "high-class companies" covering Shipping and Motors, Oil and Fuel, Stores,

Textiles, Breweries and Distilleries, Tobacco, Gold Mines, Building and other industries.

The buying and selling of industrial securities is conducted in this country on the London Stock Exchange and twenty-two provincial Stock Exchanges, working in co-operation with the London Stock Exchange. The London Stock Exchange was founded before the close of the eighteenth century. The original deed of settlement, laying down the constitution of the Stock Exchange, was made in 1802, and was superseded by a deed of settlement of 1875. Until 1945 there was a "dual-control" system of control, the building and finances being controlled by nine elected members called the trustees and managers, whilst the conduct of business, such as the admission of members, was in the hands of a committee for general purposes. On the 1st April, 1945, the dual-control system was abolished, the two bodies being merged into the Council of the Stock Exchange.

The general social changes of the past few years have had their effect on the Stock Exchange. Nationalisation; the disappearance of large foreign investments; the taxation of the rich; the redistribution of wealth among the community, with a subsidiary effect of diverting money from share purchases to football pools and similar speculations; the diversion of small private savings into savings certificates, bank deposits and building societies, have brought down the "normal" business dealing figure from 13,000-18,000 share dealings a day to under 12,000 a day. The effect on the flow of entries to the Stock Exchange has been such that whereas the total cost of becoming a member used to be about £3,000, the total cost is now less than £1,000. A Public Gallery was opened in 1953.

It is too soon to estimate the trend of events; but it would appear that major alterations in the general system of the Stock Exchange may be necessary in the future.

2. The Co-operative Movement in Britain

The co-operative idea was tried out in Britain as early as the eighteenth century, but it was not until the nineteenth

century that the movement developed its real strength. French revolutionary doctrines; the distress and unemployment following in the wake of the changes brought about by the beginnings of the Industrial Revolution; the unrest at the close of the Napoleonic Wars; all had their influence in fostering the growth of the idea of co-operative ownership of the means of production and distribution.

Producers' co-operative societies did not flourish in England; a group of such societies was indeed founded at Leicester, but they were concerned with the standard of craftsmanship rather than with volume of production. It was in agriculture, in the Scandinavian countries, that productive co-operation met with success.

Robert Owen (1771-1858), the manufacturer-reformer, pioneer of scientific management and humanitarian teacher, inspired the founding of co-operative groups; but these groups lacked adequate capital and suffered from severe competition. They failed; but, as in so many other instances in history, they were but the individual casualties in a struggle that was to have widespread and far-reaching results in the field of business organisation.

It was in distributive co-operation that the success of the British co-operative movement was founded. In 1844 a small group of weavers in Rochdale, the "Rochdale Equitable Pioneers", formed a co-operative group, and founded a distributive store. Each of the twenty-eight members subscribed one pound, and was to receive a share of the profits in proportion to the amount of his purchases. The movement spread, particularly in the north of England and in Scotland. The Industrial and Provident Societies Acts of 1852 and 1862 provided legal protection: the liability of the members was limited to the amount of their shares. The Industrial and Provident Societies Act of 1876 limited the amount of share capital any member might possess to £200.

In 1863 a federation of co-operative societies was founded, called the English Wholesale Society; it became not merely a wholesale society, but a combine producing staple commodities, owning factories and steamships. In 1869 a central propa-

gandist body, the Co-operative Union, was founded, and set up a co-operative college: a residential college for adult education. In 1869, too, the Scottish Wholesale Society was formed.

A few years later, in 1876, the Co-operative Bank was founded; it applied its profits to the reduction of interest charged for loans, and to the increase of interest given for

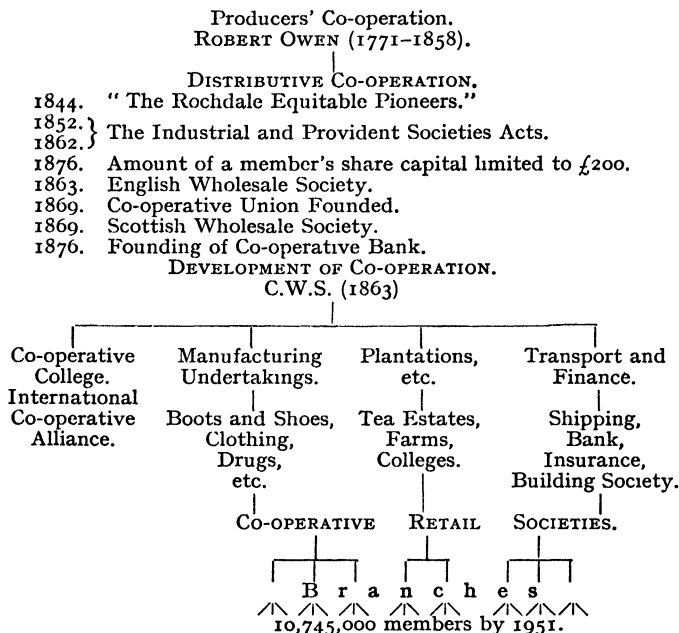


CHART 7.—THE STORY OF CO-OPERATION IN BRITAIN.

deposits, and in many respects became more of a savings bank than a deposit bank in the ordinary sense.

By 1937 the number of members in the consumers' societies reached 8 millions; and the turnover was over £250 million. In the nineteen-forties the number of co-operative retail societies passed 1,100, the numbers of members varying

from a few hundred to some thousands: the membership of the original Rochdale Equitable Pioneers expanded to 15,000.

The retail societies are independent of one another. They are members of the Co-operative Wholesale Society (C.W.S.), and receive dividends in proportion to their purchases from that organisation. But not all the commodities in which they trade are obtained through the C.W.S.

In goods not requiring expert, detailed knowledge and a high level of entrepreneurship, the Co-operative system attained a strong position in British trade: in 1939 the Co-operative Union handled 14·1 per cent of the nation's retail trade in groceries, particularly foodstuffs, nearly 14 per cent of the trade in coal, and over 9 per cent of the trade in boots and shoes.

Of recent years, perhaps because of the levelling of incomes, the Co-operative movement has attracted many middle-class and professional members. The low percentage of attendance of members at meetings of the retail societies, particularly in the south and west, indicates that its supporters are more interested in dividends than in social movements; before the Second World War the average dividend was about 1s. 6*d.* in the £1, whilst to-day it is about 9*d.*

The movement has strong links with the Labour Party; at one time it put forward Co-operative candidates for Parliament. Linking the movement internationally is the International Co-operative Alliance.

3. The Development of Banking

The growth of England's industry and trade during the nineteenth century attracted foreign traders dealing in such staple commodities as cotton, wool and timber. So high a reputation did many of these foreign and British traders attain that their signature on a bill of exchange carried with it an excellent guarantee; and they made it an important part of their functions to accept bills of exchange for other traders. This extension of their normal business activities became very profitable, and eventually many of them became merchant

bankers, *i.e.* bankers not in the technical sense of being deposit bankers or note-issuing bankers, but accepting and discounting houses, financing trade by putting into circulation bills of exchange. They later became joint-stock companies—*e.g.* in

Sixteenth and Seventeenth Centuries: Development of use of bill of exchange. The Goldsmiths—safeguarders of valuables. Beginning of use of "cheques" and "bank-notes". Beginning of private banks.

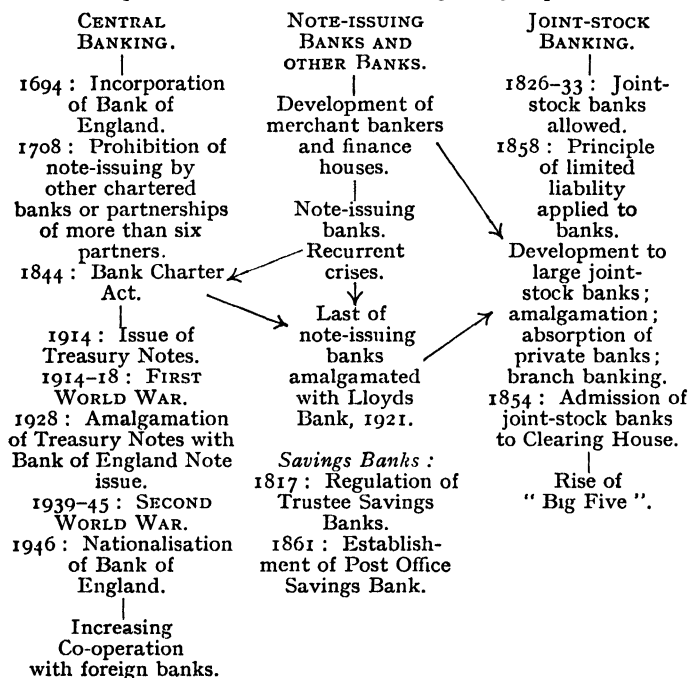


CHART 8.—THE DEVELOPMENT OF BANKING IN ENGLAND AND WALES.

1920 C. and J. Hambro and Sons amalgamated with the British Bank of Northern Commerce to form Hambros Bank, Ltd.

The connections of the acceptance houses with their associations on the Continent were disorganised by the First World

War, and a procedure was developed by which credits abroad were granted only with the guarantee of foreign banks and through them as intermediaries; a consequence was that English, American and foreign deposit banks entered into competition with the accepting houses. Since the First World War, too, the volume of Treasury Bills (promissory notes financing Government borrowing) has greatly exceeded that of commercial bills of exchange. It is held by many economists that not until the return of the commercial bill of exchange drawn on London to the position of the prime financial instrument in international trade can this country regain its strength in finance.

Another line of development, and one of supreme significance to this country, where the cheque system has prevailed to a much greater extent than on the Continent, was the establishment of joint-stock deposit banking. A joint-stock deposit bank is a bank whose main functions are the receipt of customers' deposits, the issue of cheques as a safe and prompt method of payment, and the granting of loans to customers on security.

As we have seen in Chapter III,* after the establishment of the Bank of England, an Act was passed in 1708 prohibiting any other chartered bank or partnership consisting of more than six persons from issuing bank-notes. The small country banks continued to issue notes, but their tendency to issue notes beyond their capacity to meet them in a crisis involved them in frequent failures. The situation became so serious that government intervention became inevitable, and two schools of thought on the future of bank-note issuing arose, one of which, the currency school, held that all notes issued should be backed by an equivalent amount of gold, whilst the other, the banking school, thought that the volume of notes issued by banks should depend upon the latter's estimates of the requirements of trade. Doubtless because the Government thought that the bankers had demonstrated their ability in this direction only too clearly, the currency school of thought prevailed, and the Bank Charter Act, 1844, was

* See p. 32.

passed. This Act prohibited an increase in the note issues of the private banks, and provided that, in the event of bankruptcy or amalgamation, the right to issue notes should be lost and the Bank of England could issue notes to the extent of two-thirds of the lapsed issues. As a result of the operation of this Act, and the absorption of the note-issuing private banks by the growing joint-stock banks, the Fiduciary Issue of the Bank of England (*i.e.* the issue of notes not backed by gold or silver) reached £18,450,000 by 1914. In 1921 the last of the private note-issuing banks, Fox, Fowler and Co., amalgamated with Lloyds Bank; and the Bank of England became the sole note-issuing bank in England and Wales.

In the meantime banking had reached out in another direction. In 1826 an Act was passed allowing the establishment of joint-stock banks with power to issue notes so long as they were farther than 65 miles from London. In 1833 joint-stock banks were allowed inside London, but not with note-issuing power. It was in 1858 that a great impetus was given to joint-stock banking: the principle of limited liability was extended to banks. In 1879 unlimited companies formed before the 1862 Act, which allowed limited-liability joint-stock companies to be formed, were allowed to adopt limited liability; and practically all the joint-stock banks availed themselves of the opportunity.

The way was thus open for the founding of large joint-stock banks, and a process of absorption of the small private banks and the establishment of branches began, and culminated in the bulk of the deposit-banking business of the country becoming concentrated in the hands of the "big five": Barclays, Lloyds, Midland, National Provincial and Westminster.

Besides their main functions—the receipt of customers' deposits, the provision of the cheque system and the granting of loans to customers—the joint-stock banks have carried on other functions: discounting and accepting bills of exchange; acting as agents for investments; trustee and executorship business. They became an integral part of the money market, centring on the City of London and the Bank of England, that intricate machinery for the borrowing and lending of money

and for investment in industry and government and municipal loans: it comprises the commercial banks; acceptance and discounting houses; bill-brokers (dealing in bills of exchange); the foreign-exchange market; issuing houses (which arrange for the issue of shares); investment trusts, and finance houses. It was the establishment and maintenance of this financial machinery which made London the financial centre of the world—a position she held until the rise of the United States as the great creditor nation after the First World War transferred the world's financial centre of gravity to New York.

Another line of development has been the establishment of savings banks. Trustee Savings Banks were begun early in the nineteenth century; there were seventy-eight such banks already in existence by 1817, when they were first regulated. By the nineteen-forties there were over 700 offices of Trustee Savings Banks in the country, with over 3½ million accounts and over £450 million due to depositors. The Trustee Savings Banks work under Government guarantee.

The Post Office Savings Bank was established in 1861; by the nineteen-forties over £1,000 million was due to depositors.

4. Central Banking

The Bank Charter Act of 1844 fixed the Fiduciary Issue at some £14 million; after the note issues of private banks had lapsed as the result of the operation of the Bank Charter Act, the Fiduciary Issue stood at £19¾ million by 1921.

The Act provided for the division of the Bank of England into two departments: the Issue Department, which issued notes, and the Banking Department, which conducted banking business.

As the financial machinery of the country took shape in the nineteenth and twentieth centuries, the Bank of England developed its functions as a central bank:

(1) It regulates the money of the country, controlling the note issue in England and Wales and issuing the token coinage on behalf of the Royal Mint; it safeguards the gold reserves of the nation, and controls the Fiduciary Issue.

(2) It acts as the Government's banker, keeping the Consolidated Fund, the Government's banking account; and it manages the National Debt.

The Bank of England Act, 1946, nationalised the Bank of England; but this was to a great extent merely a "practice" move on the part of the Labour Government, for the first time in full power: the Bank of England was to all intents and purposes nationalised already.

(3) It acts as the bankers' bank, holding the cash reserves of the other banks. A bankers' clearing house had been established as early as 1775; the joint-stock banks were admitted to the clearing house in 1854. "Clearing" of cheques results in the indebtedness on balance of one bank to another: the debtor bank settles its indebtedness by drawing a cheque on the Bank of England in favour of the creditor bank.

(4) It controls the credit of the country. The joint-stock banks formerly maintained a ratio of 10 per cent of cash in hand and at the Bank of England to deposits. It was reduced in 1946 to 8 per cent. If a loan is made to a customer, the amount of the banks' deposits rises by that amount, and the ratio is reduced. If the Bank considers that a contraction of credit is desirable, it will, by "open market operations", reduce the commercial banks' capacity to lend; it offers securities for sale, and customers who buy such securities will pay for them by withdrawing money from their accounts. The Bank may also raise the Bank Rate, and a rise in the Bank Rate is followed by a raising of other rates in the Money Market, so that the rate of interest on loans is increased; this will discourage borrowers.

The Bank of England, too, co-operates with other Central Banks and with such institutions as the Bank for International Settlements. In Scotland the development of banking went along somewhat different lines; there is no Central Bank for Scotland, this function being carried on by the Bank of England. Eight Scottish banks issue notes, and Bank of England notes circulate in Scotland; the two systems work closely together.

Before the Second World War the delicately-adjusted machinery for control of credit and the maintenance of an adequate supply of currency worked fairly well. But the Bank Charter Act was not able to prevent the recurrence of financial crises—which were met, indeed, by the suspension of the Act, enabling the Bank to issue notes in excess of the Fiduciary Issue. A crisis in 1847 occurred as a consequence of a combination of factors: tremendous spending on railway construction; speculation; a succession of failures of the potato crop in Ireland; bad harvests in England; a short cotton crop in America; the dearness of raw materials; the importation of grain on the repeal of the Corn Laws in 1846; a drain of gold; a sudden fall in wheat prices; the onset of unemployment. Other crises followed in 1857 and 1866, the latter year seeing the overwhelming of the great and respected house of Overend, Gurney & Co. The nineteenth century, indeed, was a century of crises occurring with such seeming regularity that the expression “trade cycle” was applied to the succession of booms and slumps which occurred.

The granting of credit and dealings on credit must eventually involve the provision of a currency to meet the needs of the people. On the outbreak of war in 1914, with the rising of wages and salaries and the demands for currency, the Government issued Treasury Notes through the Bank of England, the issue being authorised by the Currency and Bank Notes Act, 1914. These Treasury Notes were for £1 and 10s.; there was, therefore, a dual system of currency notes in operation, the Bank of England issuing notes for £5 and upwards. The Currency and Bank Notes Act, 1914, authorised the Bank of England to increase its Fiduciary Issue beyond the figure of £19½ million, its hitherto legal limit. The Gold Standard, under which notes were freely convertible into gold and *vice versa*, disappeared throughout Europe.

By the end of the war there were £98 million of bank-notes in circulation and £323 million of Treasury notes. The rising prices were a warning that inflation was in existence; and in 1918 the Cunliffe Committee was appointed. It recommended that a limit be fixed to the Fiduciary Issue and that the

Treasury Note issues and Bank of England note issues should be amalgamated. This latter recommendation was carried

Pre-1914	The Gold Standard.
1914-18	FIRST WORLD WAR. 10s. and £1 Treasury Notes. Rise in prices. Inflation.
1918	Cunliffe Committee.
1920-25	Deflation. Fall in prices. Unemployment.
1925	Restoration of Gold Standard—Gold Bullion Standard. Fall in world prices. Trade improvement.
1928	Amalgamation of 10s. and £1 Treasury Notes with Bank of England issue.
1928-29	Stock Market boom in the United States. Flow of capital to the United States. Accumulation of gold in the United States and France.
1929	Wall Street crash. Contraction of trade. Fall in prices. Unemployment. The United States now the great creditor nation. Beginning of depression.
1931	Macmillan report. Britain abandoned gold standard.
1932	Exchange Equalisation Fund.
1933	World Economic Conference—failed.
1933-39	Stimulus given to prices by re-armament.
1939-45	SECOND WORLD WAR. Inflation. Lend-Lease arrangements with the United States. Fiduciary Issue now over £1,000,000,000.
1944	Bretton Woods Conference.
1945	Creation of Finance Corporation for Industry, Ltd., and Industrial and Commercial Finance Corporation, Ltd. Appointment of Development Areas Treasury Advisory Committee.
1946	The United States lent Britain £1,100,000,000. Canada lent Britain £281,000,000.
1947	Marshall Aid—European Recovery Programme. Continued Inflation.
1948	General Agreement on Tariffs and Trade.
1949	Devaluation of British pound sterling from 4.03 U.S. dollars to £1 to 2.80 dollars to £1.
1950	European Payments Union.
1951	Suspension of Marshall Aid—merging into general defence contribution.
1952	Commonwealth Economic Conference.

CHART 9.—MONEY AND PRICES SINCE 1914.

out in 1928 under the provisions of the Currency and Bank Notes Act, the Bank of England being then empowered to

issue notes for £1 and 10s. The Fiduciary Issue was fixed at £260 million. In 1945 Bank of England notes of £10 and upwards were withdrawn from circulation.

The Gold Standard was restored in 1925, but was abandoned again in 1931. The onset of depression caused the appointment in 1929 of a Committee on Finance and Industry, the Macmillan Committee, to investigate the causes of the depression and to recommend measures which would enable the banking and financial system to promote the development of trade and commerce. The Committee reported in 1931 that the Bank of England should be the authority for a managed currency system, in which the supply of currency should be managed to meet the needs of trade and industry; the division of the Bank into two departments should be abolished; the proper use of gold was not to back notes but for international payment: more elasticity was required in the control of the note issues by the Bank.

The main recommendations of the Macmillan Report were not implemented; the State certainly adopted a managed currency, but did not manage it very well. The report recommended an extension of the commercial-bill business; in fact, the Government continued to borrow money on a huge scale through the medium of Treasury Bills, the management of which does not demand very much in the way of financial knowledge, and little in the way of entrepreneurship or commercial risk-taking, which has been the foundation of Britain's prosperity. While stating that Bank Rate policy was a necessity for the sound management of a monetary system, the report pointed out that it was a means of maintaining the stability of the exchanges rather than the stability of business. Opinions on the efficacy of the "open market operations" and Bank Rate policy are still divided; it would seem that these instruments of the Central Bank serve merely to indicate the trend of events to commerce and industry rather than to initiate events.

In Britain the banking system generally has not been so intimately connected with industrial organisation and development as in the United States and Germany. The British

banks have followed the tradition of keeping themselves aloof from speculative enterprise—perhaps a wise policy, but not making for co-ordination in the State's industrial structure. The banks receive subscriptions, but do not vouch for the issues of shares of undertakings. In the United States financial undertakings had a great deal to do with the development of American railways and other industries. The German banks provided financial assistance and advice to industry, issued credit, and, in fact, assumed a definite responsibility in the control of industry. The German banks made the German industrial revolution possible. In France the banks made nearly all the issues in industrial undertakings, and certain powerful banks developed into *banques d'affaires*, intimately connected with industry both at home and abroad.

The Macmillan Report did not sympathise with the idea that the banks should manage industry, but stated the view that there should exist a closer connection with the City of London and industry, and that whilst the industrialists themselves should be responsible for the business and general management of a company, the banker should be the adviser in matters of finance.

The Second World War initiated another period of rapid inflation; and after the Fall of France in 1940 the era of sweet reasonableness in respect of wage-increase demands gave way to an era of wages and prices chasing each other in an ever-increasing spiral. The Fiduciary Issue soon reached over £1,000 million: the time of "astronomical" figures in the issue of notes not backed by gold had begun.* On the outbreak of the Second World War the resources of gold held by the Exchange Equalisation Fund (this was established in 1932 in order to "iron out" violent fluctuations in the exchange rates by taking up the demand for sterling or buying sterling when large amounts were offered) amounted to about £510 million, and these were depleted during the war. Exchange restrictions were imposed and tightened. Lend-lease arrangements were made with the United States to enable Britain to

* On June 8, 1955, the Fiduciary Issue reached £1,825 million; the notes in circulation were £1,778·7 million.

import goods from her after Britain's dollar resources had become exhausted. The financial chaos resulting from the war induced the calling of the United Nations Monetary and Financial Conference at Bretton Woods. A scheme for setting up an international monetary system was formulated but subsequently abandoned; but it was agreed to set up an International Monetary Fund to promote international trade and to set up an International Bank for Reconstruction and Development.

In 1946 the United States Congress agreed to make available to Britain a credit of £1,100 million; Canada lent £280 million. These credits were insufficient; and in 1947 the scheme of Marshall Aid, the European Recovery Programme, was initiated: the United States would help Europe if the European nations could work out a joint recovery programme. Marshall Aid was suspended in 1951, American aid to Europe then being merged into a general defence contribution.

Meanwhile, pressure of events had forced that closer co-operation between the central bank system and industry which the Macmillan Report had advocated. In 1945 the Chancellor of the Exchequer announced the creation of two new corporations which were established to promote this co-operation: the Finance Corporation for Industry, Ltd., to provide finance to industrial enterprises for their rehabilitation and development in the national interest; and the Industrial and Commercial Finance Corporation, Ltd., to supply medium- and long-term financial facilities of from £5,000 to £200,000.

In 1945, too, the problem of those areas of the country in which changes in the organisation of industry, subsequently to be discussed, had caused unemployment and distress came under review. A Development Areas Treasury Advisory Committee was appointed by the Treasury to advise on the giving by it of financial assistance to industrial undertakings for capital development in a "Development Area".

Immediately after the war British industry could sell its goods easily in response to the urgent demands of overseas buyers. But when this era of a "sellers' market" came to

an end British industrialists found that their goods were priced too high in relation to United States goods or goods sold by countries tying their currencies to the United States dollar. It was necessary to reduce the value of the pound sterling in relation to the dollar; and in September, 1949, the British pound sterling was devalued from 4.03 U.S. dollars to the £1 to 2.80 dollars to the £1.

The immediate effect in Britain was an increase in the price of bread, the wheat and flour obtained by Britain from Canada being now dearer. The goods from countries of the Sterling Area, those countries tying their currencies to the British pound sterling, and comprising mainly the Commonwealth countries except Canada, did not increase in price, nor did the goods from those countries devaluing their currencies to correspond with the devaluation in sterling.

It is evident that "central banking" has been developed during the past century to mean something far more than the close-knit, quasi-private proceedings of the commercial banks in relation to the Bank of England that obtained in the era of the Bank Charter Act, 1844. A closer system of connection with industrial organisation has been attained—a process greatly accelerated by the exigencies and effects of two world wars upsetting the delicately adjusted machinery of international finance and necessitating State control on a far wider scale and of a more direct nature than could have been imagined in the *laissez-faire* period of the early nineteenth century.

The importance of this closer connection between industry and the State in the evolution of modern industrial organisation cannot be exaggerated. Though our situation in the middle of events makes it difficult for us to estimate its full significance in the development of industrial organisation in relation to future trends, a survey of the past industrial and commercial background such as we have undertaken in this work is valuable in helping us to contrast the modern position with that of past times. Industrial organisation in the nineteenth century developed to some extent apart from the organisation of the financial system, in contrast to the inter-

linked processes of the Continent and the United States. To a large degree, this made for the financial strength and international reputation of the British system: the great joint-stock banks concentrated their attention on financial soundness, and accommodation to industrial undertakings was given on adequate security. It was doubtless for this fundamental reason that Britain avoided such a crash as shook Wall Street in 1931. But the dependence of Britain on international trade made inevitable the spreading to this country of a depression abroad; and the profound changes in international economic relationships caused by two world wars have caused equally profound changes in the relationships between the State and industrial organisation.

The problem of controlling inflation inspired the British Government to appoint a Committee on the Working of the Monetary System. This Committee, the Radcliffe Committee, published its Report in August, 1959.*

Our story of modern industrial organisation from now on will show the characteristic of an ever-widening and embracing State control and regulation; and where not control and regulation, State influence, extending not merely to the regulation of conditions in factories and workshops and the relationships between employers and employed in wages structure, but to the siting of industry itself, to the activities of combines, to the contemplation and limitation of restrictive practices. The State has itself entered the field of large-scale industrial organisation in the creation of great public corporations and has sometimes replaced private enterprise by State enterprise.

Such movements and influences can be understood only by reference to the general background of financial and economic affairs of the nation generally; and it is to a survey of this background that we must now turn our attention.

* Cmd. 827, 15s. net.

CHAPTER VIII

THE STATE OF THE NATION

I. The National Debt

THE National Debt is the debt owing by the Government; the internal National Debt is debt owing to people within the country who have lent money to the Government, which is therefore required to pay principal and interest. It is this internal debt which is generally spoken of as the British National Debt; the external debt is that owing abroad, and consists to-day mainly of the loans made to Britain by the United States and Canadian Governments, amounting at the end of the Second World War to over £2,000 million.

The British National Debt stood in 1954 at over £26,500 million, or over £500 per head of the population. The payment of interest on this debt is raised by taxation and does not take wealth out of the country, though it redistributes the national income. The greater part of it has been incurred in the financing of wars during the past 250 years; there is, therefore, little in the way of real assets represented by the debt. Moreover, the debt increases in war much faster than it can be repaid, so that only by the application of technical knowledge and skill to productive work over a long period of peace is there hope of extinguishing it.

Though the National Debt may be said to have had its beginnings during the reign of Charles II, when the London goldsmiths advanced money to the Exchequer on the security of the public revenue, it was on the incorporation of the Bank of England in 1694 that the National Debt became an institution; it will be remembered that the charter of the Bank was granted in consideration of a loan by certain financiers of £1,200,000, on the security of certain duties on liquors and

tonnages of ships. Parliament reserved the right to redeem the debt at any time after 1705, but the indebtedness was increased by succeeding governments. By the end of the war with France in 1697 the debt amounted to over £20 million, and after a reduction to £16 million at the end of William III's reign, rose to £54 million in Queen Anne's reign as the result of the expenses of the War of the Spanish Succession. After the Seven Years' War it reached £146 million in 1763; in 1816 it was £900 million, costing over £30 million a year in interest and management expenses. The First and Second World Wars caused the great rises to its present fantastic size.

Though, as has been said, in an internal debt the money is owed to the citizens of the country by the Government, and does not take wealth out of the country, yet its growth is a real burden on industry: the money spent on war materials could have been invested with profit in industrial undertakings, and the payment of interest involves taxation which will affect industry and enterprise. Consolation is found in the fact that, but for this expenditure, British industry might perhaps not be in existence at all.

2. The Growth and Decline of Free Trade

During the eighteenth century the amount raised and spent by the Government rose from about £4 million annually to about £18 million. The wars of 1793-1815 caused this sum to rise to nearly £60 million. Until 1842 the money was raised mainly from Customs and Excise duties. It is interesting to know that bonded warehouses for tea and coffee (the duty being paid on the goods when they were taken out of the warehouses) were established by Sir Robert Walpole in 1724.

After 1787 the national revenue was paid into the Consolidated Fund, and it became possible to set out an annual national balance sheet to show income and expenditure. At first a number of Commissioners were employed to audit public accounts; but in 1866 an official called the Comptroller and Auditor-General was appointed for this purpose.

Reformers like William Cobbett had been agitating for an overhaul of the Parliamentary system so as to give effect to the wishes of the increasing numbers of workers; but a government frightened by the excesses of the French Revolution was

Eighteenth Century	Income and Expenditure of British Government £4 million → £18 million.
1776	Publication of Adam Smith's <i>Wealth of Nations</i> .
1793-1815	Wars. Income and Expenditure £60 million.
1815	Budget £100 million. Corn Laws passed.
1816	Budget £66 million.
1816-42	Money raised mainly from Customs and Excise duties.
	In 1816 abolition of Income Tax imposed in 1798.
1840s	The "Hungry Forties".
	Reduction and simplification of Customs duties by Peel.
1841	Recasting of system of national finance by Peel.
	Introduction of Income Tax of 7d. in the pound.
1846	Abolition of Corn Laws.
1849	End of Navigation Acts.
1853	Gladstone's reforms—reduction and removal of duties.
1860	Further reforms by Gladstone.
1850-70	Prosperity.
1894	Death duties introduced.
1909	Super-tax on incomes over £5,000 per annum.
1914-18	FIRST WORLD WAR.
	"McKenna" duties. Abolished 1924, restored 1925.
1921	Safeguarding of Industries Act.
1932	Protection.
	Ottawa agreements.
1934	Budget £700 million.
1936-38	Deficit in Britain's trading position.
1939-45	SECOND WORLD WAR.
	Bilateral trading agreements; trade restrictions.
1947	Marshall Aid.
1948	General Agreement on Tariffs and Trade.
1950	European Payments Union.
1952	Commonwealth Economic Conference.

CHART 10.—TARIFFS AND THE NATIONAL FINANCIAL POSITION.

in no mood to listen to such proposals; and, in fact, a cavalry charge scattered a crowded meeting at St. Peter's Fields, Manchester, in 1819—hence the name of the "Peterloo Massacre". With the coming to power of the industrialists, the factory owners, pressure for reform—in favour of the industrialists, not the workers—was exerted. The Reform

Bill, 1832, which gave power to the middle classes, was passed after the wealthy people had threatened to withdraw their money from the Bank of England.

The shifting of power from the landowners to the industrialists enabled the latter to put into practice the free-trade ideas advocated by Adam Smith. The early results of the change of attitude have already been told.* In the 1840s Peel reduced and simplified the Customs duties; and the Corn Laws were abolished in 1846. Pitt had introduced an income tax in 1798, graduated according to income. It had been imposed to help pay for the French wars, and was abolished in 1816. In the last year of the war, 1815, the budget exceeded £100 million. In 1816 it fell to £66 million, £31 million of this being interest on the debt Peel had raised. Huskisson, who became President of the Board of Trade in 1823, abolished bounties on exports and reduced a number of duties on imports. Peel became Prime Minister for the second time in 1841, and in this Ministry he recast the system of national finance, reducing and abolishing duties; to make up for the revenue from them he introduced for three years an income tax of 7*d.* in the pound on incomes over £150 per annum. At the end of the three years the experiment had become so successful that Peel decided to reduce or abolish yet more duties and continue the income tax. In 1853 Gladstone, Chancellor of the Exchequer in Lord Aberdeen's Ministry, removed and reduced further duties; and after the Crimean War he continued his policy in his 1860 budget.

The policy of free trade was, of course, of great benefit to the industrialists, who wanted to exploit all means to obtain the great advantage from Britain's leadership in the Industrial Revolution. The policy was of great benefit to the country as a whole; and from 1850 the country entered upon a twenty-year period of prosperity.

Income tax was imposed in the hope and expectation that it would prove a temporary measure; but the increasing scope of government activity, and the increasing expense in national defence and social reform, caused the hope to recede; all hope

* See p. 26.

was, indeed, abandoned officially by Asquith in 1907. In that year Asquith extended the scale of death duties introduced in 1894. Lloyd George imposed a super-tax on incomes over £5,000 per annum in 1909.

In 1902 a protectionist policy was adopted by Germany. The free-trade tradition of Britain was opposed to the attitude of "fair trade" or retaliation suggested in some quarters, but the arguments of Joseph Chamberlain were beginning to weaken this tradition. During the First World War the "McKenna" duties on clocks, watches and motor-cars were imposed to economise shipping space. These duties were abolished by the Labour Government in 1924, but restored by the Conservative Government in 1925. The Safeguarding of Industries Act of 1921 was passed to protect "key" industries and those suffering from foreign "dumping". The abandonment of Free Trade was marked by the protection of 1932: a general duty of 10 per cent *ad valorem* was passed, subsequently raised to 20 per cent.

In 1932, too, was established on a broad scale the principle of Imperial Preference; under the Ottawa agreements Customs duties on goods imported from the Empire countries were charged at a lower rate than those from other countries, and the Dominions granted preferential duties on United Kingdom manufactured goods and Colonial produce.

3. The National Financial Position

Inflation, the extension of social services, the increase in debt interest, the expanding and devastating expenditure on armaments, raised the Budget figures to nearly £700 million by 1934. The Second World War gave a few more twists to the spiral of inflation; the total defence expenditure reached over £1,400 million; the total Ordinary Revenue and Expenditure came to over £4,000 million.

Already, before the Second World War, Britain was barely paying her way in her trading. The average total cost of Britain's imports for the years 1936-38 was £884 million. The visible exports (exports of goods) were £496 million in

value. Of the "invisible" exports, shipping services accounted for £105 million, and banking and miscellaneous services for £44 million; the income from overseas investments was £203 million. There was thus a deficit of £36 million, which was met by borrowing from other countries or from the sale of investments owned abroad.

The Second World War had a disastrous effect upon this somewhat precarious economy. Workers were transferred to armament factories, at the expense of the export trade; British ships were sunk faster than they could be replaced, and over a thousand million pounds' worth of investments were sold before "Lend-lease" started; by 1945 the income from investments was halved. Britain's overseas debt was £750 million in 1938; in 1945 it was £3,355 million.

Great efforts on the part of the British people reduced a net trading debt of £630 million in 1947 to £150 million in 1948. 1948 showed a surplus with the Sterling Area—the countries conducting their trade in sterling and comprising mainly Commonwealth countries. The European Recovery Programme—"Marshall Aid"—helped certain European countries with loans and gifts of dollars, and Britain turned a deficit with these countries into a surplus; with the countries of the world generally, apart from America, the deficit was comparatively small. But with the Western Hemisphere generally there was a large deficit—six out of every ten shillings' worth of imports from the Western Hemisphere was not being paid for by earnings: it came from European Recovery Programme aid.

In the years immediately after the war the "terms of trade" moved against Britain: less imports could be obtained for exports than in 1938, because while the world generally was still short of the manufactures which Britain could supply, she was one of the many customers urgently in need of the food and raw materials which Europe could not supply so abundantly as before, so that food prices rose higher than the prices of manufactured goods.

To make matters worse in world trading, strangling restrictions had been imposed on trade by the countries of the

world; "bilateral" trading agreements were made between countries which, in effect, went back to a system of barter. The 1937 Report of the Bank for International Settlements showed that whilst at the end of 1936 world industrial production was 20 per cent above the 1929 level, the volume of world trade was 10 per cent below it. It was evident at the end of the war that the process going on was one of national and international suicide. In 1947 international tariff negotiations took place in Geneva; and twenty-three countries signed an agreement for the general reduction of tariffs. In 1948, at Havana, a Charter of the International Trade Organisation was drawn up and signed by fifty-four countries, though the Charter has not yet been implemented. In 1952 a Commonwealth Economic Conference was held, and British representatives proposed a revision of the General Agreement on Tariffs and Trade signed in 1948 by twenty-three countries (an important group really in earnest about tariff quota reductions) so as to allow new and increased Commonwealth Preferences; but the Commonwealth countries did not take kindly to the idea of a new Empire Free Trade policy, with tariffs against outside countries.

The slow strangulation of trade resulting from bilateral agreements was combated by a European Payments Union (superseded in 1958 by the European Monetary Agreement) set up in 1950 under the Organisation for European Economic Co-operation to enable countries which were members of the organisation to set off surpluses and deficits with one another.

In 1944, the Governments of Belgium, the Netherlands and Luxembourg concluded a customs union agreement which came into force in 1947. In 1950, these "Benelux" countries, together with France, W. Germany and Italy, formed a Coal and Steel Community, in which the member countries pooled their coal and steel resources. In 1956, it was proposed that these countries should form an European Economic Community abolishing their internal customs duties and imposing a common tariff on the countries outside. Negotiations resulted in an agreement, signed in Rome in 1957, to set up a European Common Market, which in the course of the twelve

to fifteen years suggested for the full abolition of internal tariffs, will comprise about 160 million people.

In 1957, Britain suggested the formation of a wider organisation, the Free Trade Area, comprising the European Common Market countries and the other members of the O.E.E.C. Britain's suggestion of an industrial Free Trade Area was intended to enable her to continue to protect her agriculture and to maintain her Commonwealth relationships. The scheme was not established; but in November, 1959, Ministers from the U.K., Sweden, Denmark, Norway, Switzerland, Austria, and Portugal (the "Outer Seven"), met in Stockholm and approved a Convention to establish a European Free Trade Association. The EFTA plan envisages the abolition, by 1 January, 1970, of all protective tariffs and quotas on industrial goods which originate in the EFTA area. This area comprises a rich and diversified market of 88 million people.

Rationing, limitation of supplies, food control, financial control—all kinds of control were combined with government direction of industry to combat the economic consequences of a Second World War in a world where such consequences can be calamitous. The longer-term results of such control and taxation have been such as to surprise even Chancellors of the Exchequer. An outstanding example of the way in which interference with the free play of economic forces can have lasting effects on industry and national finance is seen in the Purchase Tax. This was levied on consumers' goods delivered on or after the 21st October, 1940, and was applied to a large variety of commodities, the rate varying from 16½ per cent on essential and household goods to 100 per cent on luxury articles. Originally applied as a means of curtailing expenditure and so combating inflation, the tax proved to be a source of income to Chancellors of the Exchequer such as the holders of this office had not dreamed of. In 1950, the revenue from purchase tax amounted to £300 million—an appreciable contribution to the resources required by the state to meet its vast expenditure on social services.

4. The Condition of the People

Wealth was unequally distributed in the Middle Ages, and there was a good deal of poverty; but the peasant possessed security, and could rely on a certain amount of protection from the lord of the manor. Such destitution as occurred was relieved by the Church, and the gilds exercised the functions of friendly societies as well as those of professional associations.

The spread of pasture farming and the displacement of the villeins caused unemployment and vagrancy; and the end of the Wars of the Roses let loose on the countryside the survivors of the baronial retinues. The decay of the gilds and the dissolution of the monasteries by Henry VIII intensified the problem. Severe laws were enacted against able-bodied beggars, and a compulsory poor-rate came into existence in 1572. The Poor Law of 1601 consolidated previous legislation; the parish was the unit of poor-law administration.

During the last quarter of the seventeenth century statesmen adopted the idea of "farming out" the poor; the "managers" of workhouses were able to undertake the relief of destitution in the surrounding parishes in return for an annual payment. This system was abolished in 1792. The Speenhamland system has already been mentioned.* Its cessation came with the appointment of the Poor Law Commission of 1834.

The first half of the nineteenth century, though it brought wealth to the rising new middle class, was a period of widespread distress for the working classes. During the war period of 1793-1815 prices rose faster than wages. The drift of agricultural workers to the towns; the bearing down by employers on wages to meet competition; the turning of ex-soldiers to civilian life, tended to force workers' wages down. Resentment of the labour-saving machinery resulted in outbursts of machine-breaking organised by the Luddites; and the Government retaliated by passing, in 1819, the Six Acts, which among other things restricted public meetings and placed a heavy stamp duty on workmen's pamphlets.

* See p. 65.

Parliamentary reform was demanded by the Chartists; their last petition was presented, and rejected, in 1848, and the coming of better times resulted in the dying out of the movement—but not before public opinion had been so influenced that eventually the reforms demanded by the Chartists came to pass. Successive Reform Acts in 1867, 1884, 1918 and 1928 enlarged the franchise to cover the whole population; subsequent legislation abolished plural voting.

The pressure of events broke down the *laissez-faire* attitude of the Government in the second half of the nineteenth century (see Chapter IX, Section 3). The first effective Factory Act was passed in 1833; the first Act of Parliament regulating conditions in coal-mines, prohibiting the employment of women and children, was passed in 1842. Successive Truck Acts from 1831 onwards had as their object the ensuring of payment to workmen in cash and the prohibition of unwarrantable deductions from wages in respect of food, fuel, etc. The Trade Boards Acts, 1909 and 1918, fought "sweating" in industry by providing machinery for wage negotiation in badly organised trades; they were subsequently superseded by the Wages Councils Acts, 1945-59.

So the nineteenth century wore on, and the economic and social consequences of the Industrial Revolution, the main features of which will be examined in the next chapter, brought about their inevitable and far-reaching changes. In fact, the "nineteenth century" went on until 1914, a year which saw the outbreak of the First World War and the beginning of an era of rapid change whose nature began to be apparent only in the inter-war years and after the Second World War. The Labour Party came into office and finally, in 1945, into full power; by this time it included men of wealth and industrial prestige and power. Professional men and women had joined its ranks. The old party system, Liberals *v.* Conservatives, had given way to the new major-party system: Labour *v.* Conservatives. The State became closely concerned with problems of industry and industrial organisation, as well as with social problems. The Ministry of National Insurance was created in 1944; the National Insurance Act, 1946, and

National Insurance (Industrial Injuries) Act, 1946, the National Health Service Act of 1946, the National Assistance Act of 1948, inaugurated an era of social legislation which characterises the modern "Welfare State".

A new word of tremendous implications has come into the language: "automation", comprising the processes by which work is carried on in "automatic" factories. "Automation" does not mean merely mechanisation, which in essence is only the substitution of mechanical power for human muscle. "Automation" implies the *supervision* of the machine, so that errors and defects are "reported" and rectified, a result obtained by means of electronic devices. In the gas industry, for example, measurements such as pressures, levels and speeds are checked and recorded. Up to the present, automation has been most fully developed in Britain in chemical engineering.

The use of atomic energy and automation must inevitably result in fundamental economic change, bringing with it equally fundamental social change. In the meantime, the necessity of examining the persistent rise in prices since the end of the Second World War, and of finding some means to stop the process of inflation which has troubled the British economy, gave rise to the appointment in August, 1957, of a Council on Prices, Productivity and Incomes, the Cohen Council. The terms of reference of the Council were:

"Having regard to the desirability of full employment and increasing standards of life based on expanding production and reasonable stability of prices, to keep under review changes in prices, productivity and the level of incomes (including wages, salaries and profits) and to report thereon from time to time."

The First Report of the Council was published in February, 1958, the Second in August, 1958, and the Third in July, 1959.

CHAPTER IX

THE SOCIAL AND ECONOMIC CONSEQUENCES OF THE INDUSTRIAL REVOLUTION

I. Population Changes

THE evolution of modern industrial organisation cannot be studied as an isolated phenomenon; it must be related to the larger social and economic background: the effects of the Industrial Revolution generally are part of the body in which the cells of industrial enterprises have their growth. Large industrial undertakings require for their very being a labour force for production and a market for their products. The study of population is, therefore, relevant to the study of the history of industrial organisation.

For over a thousand years the population of Britain was related closely to the agricultural system: a self-sufficing economy kept a population of under 6 millions more or less adequately, if coarsely, fed. In 1670 the population of England and Wales was, it has been estimated, about 5 $\frac{3}{4}$ millions. When the first census was taken in 1801 the population was found to be nearly 9 millions; by 1921 it was nearly 38 millions; by 1931, nearly 40 millions.

In 1700 the population of Great Britain was about 6 $\frac{1}{2}$ millions; the most densely populated areas were the Home Counties agricultural areas—near the London market—and the woollen areas of the Cotswolds, the Severn valley, Norfolk and the West Riding of Yorkshire. Less than one-fifth of this population lived in towns.

Between 1760 and 1820 the population of the country increased to over 12 millions. London increased its population rapidly; the populations of Liverpool, Manchester and Bradford doubled themselves in twenty years: by 1850 half

the population was living in towns. Besides the London area, the increases took place in the coal-fields, north and west of a line from Bristol to Hull. The population grew beyond the capacity of home agriculture to feed it, even although farming methods improved during the nineteenth century; the imports of food were being paid for by the products of the new manufacturing industries.

In 1798 appeared the first edition of Thomas Malthus' famous essay, *Essay on the Principles of Population as it Affects the Future Improvement of Society*; a revised version was published in 1803. Malthus was influenced by his survey of the miseries of the peasants before the French Revolution, and his work did much to earn for Economics the title of "the dismal science". His thesis was that population tended to outstrip food supply, and that disastrous over-population could be prevented only by two kinds of checks, positive and preventive. The positive checks are war, disease, famine and vice. The preventive checks are prudence and self-control.

Malthus has been criticised on the ground that he did not foresee the vast strides which would be made in agricultural and industrial techniques (in 1872 arable farming reached its highest acreage, 18.4 million acres, and better varieties of seeds and improved methods of cultivation were in vogue), so that a greater population could be sustained with a higher standard of living. It is easy to be wise after the event; and in any case Malthus was substantially right: no doubt, being a clergyman of his age, he would have classified modern methods of contraception as "vice". Certainly, in our present age the East tends to fulfil his predictions; and even in modern Western civilisation acute uneasiness is expressed about the food position when strategic considerations arise.

In point of fact, the point where "diminishing returns" begin to operate in agriculture has been pushed farther and farther away under modern techniques. Nevertheless, even if numbers in themselves have not proved so serious a cause for alarm as Malthus anticipated, the comparative densities and distribution of population have had results serious enough.

The manufacturing towns that grew up so often contained the "dark, satanic mills", the squalor and ignorance, the insanitary dwellings, the moral and spiritual filth, that were to stir the consciences of the reformers. Beneath the pious respectability of the Victorian manufacturing middle-class society, there groaned the dark misery of the poorer classes. Industry was concentrated—to provide new problems for statesmen when the prosperity built up by nineteenth-century captains of industry began to fade.

The spread of popular education; the reforms in factories; the rise of trade unions; the development of scientific thought; the awakening of social conscience and consciousness in the mass of the population; all interacted with the crude effects of death-rate and birth-rate changes to produce changes in the distribution and organisation of industrial structure. The improvement in the public-health services throughout the nineteenth century; the scientific achievements in inoculation; antiseptics; anæsthesia; the improved nursing services pioneered by the genius of Florence Nightingale; all these reduced the death-rate, which fell from 35 per 1,000 in 1750 to 12 per 1,000 in 1931.

The changes in the localisation of British industry which occurred as the result of changes in general world conditions will be considered in the next Section; for the moment it will be profitable to review the problem of population in relation to industry as a whole. The great rate of increase in population which characterised the nineteenth century has been halted. During the past few decades the total of population in Britain—and indeed, in Western Europe, America and the "white" portions of the world generally—has come to be determined, not by changes in the death-rate, but by changes in the birth-rate. The decisive factor to-day is fertility, or actual reproduction.

The birth-rate began to drop in the eighteen-seventies in Britain. The extent of the decline is indicated by the net reproduction rate: a population is stationary when the net reproduction rate falls below 1.0. It is this rate, which is below 1.0 in most European countries, the United States and

Canada, and the "white" world generally, which determines the total population of these countries.

A Royal Commission on Population was appointed in 1944, and reported in June, 1949. The Commission surveyed the growth of population from about 7 millions in 1700 to 49 millions. The fall in the birth-rate was not due to a fall in the marriage-rate, but to a decrease in the number of children born per marriage. In Victorian days there was an average of $5\frac{1}{2}$ to 6 live children per marriage. This average had fallen to 2.2 children; the deficiency below that required in the long run for replacement was of the order of 6 per cent.

Calculations based on various assumptions indicated a progressive decline in future population; the future course of births will depend mainly on the future size of the family. The age grouping of the population will alter. In 1947 there were fewer people under 20 than between 20 and 40. The average age has risen from 27 to 35 since 1891; and the proportion of people over 60 has doubled in recent years. In its earlier stages the decline developed fastest among the higher occupational categories; between 1900 and 1930 the families of manual workers were about 40 per cent larger than those of non-manual workers. Families of six children were formerly very common; such families have now virtually disappeared.

The Commission concluded that the total population would continue to grow, perhaps for another generation; after that it would decline. The working population would remain at its present size for about thirty years, though forming a smaller proportion of the total. During the following fifteen years the population of young adults aged 15-39 would fall by about 1,400,000, whilst the number of people over 65 would increase during the next thirty years by about 2,300,000. There would thus be a considerable increase in the proportion of old people.

All these changes have already raised, and will raise, problems for industrial organisation—there will be, as it were, a larger demand for bath-chairs and a lessened demand for toys; gardening tools would appear to be a better proposition for a small firm than play-pens or perambulators. In the wider sphere, the reluctance of firms to employ older people

is already being overcome by the force of circumstances as well as by urgings on the part of the Government; such information as there is available regarding a comparison of the work of older people with that of younger would seem to indicate that the older man is slower, but more reliable, more punctual, steadier in application. The employment of women, a common factor since two world wars, has tended to confuse the problem somewhat. Research on absenteeism, sickness, productivity in relation to age and sex will give industry more guide to future trends in desirable organisation.

The Report of the Economic Committee of the Commission * suggested that among the advantages of a growing population are the increase in the scale of production and the stimulation of technical improvements, and a greater flexibility in the economic system, so that obstinate mass unemployment is avoided; a disadvantage is the diversion of productive resources, which would otherwise go to raising the standard of living, to the supply of such capital equipment as houses, public utilities and industrial plant.

In the Report stress was laid on the distinction between quantity and quality; the average size of family of the unskilled worker is twice as large as that of the professional and administrative workers. To maintain stable numbers and improve the state of the population generally, the Report recommended economic reliefs for parents, a housing programme, better health services, and education for family life.

Though there is no fear of a great drop in Britain's population in the near future, the increasing number of older people has given rise to anxieties relating to pension provisions— anxieties which, in view of industrial possibilities, may well prove needless.

2. The Localisation of Industry

The principle of the division of labour, the application of which marked a stage in the progress of mankind comparable

* *Papers of the Royal Commission on Population, Vol. III : Report of the Economic Committee* (H.M.S.O., 1950).

with that marked by the control over fire or the invention of writing, has caused not merely the specialisation of occupation of persons but also the specialisation of occupation of areas. Climate, geographical features, and the relative advantages of the development of shipbuilding in the Clyde valley, determined the location of the cotton industry in Lancashire rather than the Clyde. The woollen industry became localised in Yorkshire.

Once an industry has been established in a particular area, the building of a tradition of skill and the setting up of commercial machinery tend to keep it there, even though the original advantages have become less important. The presence of local grindstones is no longer important to the Sheffield steel industry; Staffordshire's pottery industry obtains better clay from Devon and Cornwall than from its own deposits. Moreover, specialisation within areas tends to occur; the northern towns of Lancashire tended to specialise in weaving, the southern in spinning.

It was inevitable that the heavy industries of Britain should be established on or near the coal-fields. The heavy transport costs of coal and iron determined the place of production of iron and steel goods at the source of the fuel and raw material. The Lancashire cotton industry drew its machinery from the conveniently-situated nearby resources. It was inevitable that the port of Liverpool should become a centre for the cotton produce markets, that Manchester should develop a tradition of merchanting skill. Such localisation, with the proximity of raw materials, labour supply and subsidiary industries, permitted the survival of the small-scale undertakings which have so bedevilled the development of the Lancashire cotton industry.

But the economic scene is dynamic. A feature of the early period of the Industrial Revolution was the concentration of industry in the North and Midlands: the heavy industries in the coal-fields, the woollen industry in the West Riding of Yorkshire. These industries attracted large populations. In the period between the two world wars the development of alternatives to coal as sources of power—gas, electricity, oil—

made proximity to coal-fields of less importance. The newer industries were "light" industries engaged in the manufacture of such articles as radio sets, patent foodstuffs, gramophones—consumers' goods rather than producers' goods.

Statistics indicate the changes taking place in British industry. Between 1923 and 1938 the number employed in coal-mining fell by 29 per cent, in shipbuilding by 23 per cent, and in cotton manufacture by 30 per cent. In contrast, the number engaged in electrical engineering rose by 97 per cent; in motor-car manufacture by 104 per cent; in silk and artificial silk manufacture by 113 per cent; and in transport and distribution by 50 per cent. Agriculture and the old-type heavy industries shrank; the new light industries expanded.

Between 1921 and 1934 the total population of the country increased by just over 2½ millions. Of this total, London and the south-eastern counties absorbed nearly 1,700,000. London became a great magnet for industries using electrical power and economising on transport costs by placing themselves close to their markets.

Unemployment occurred in the industrial North and Midlands, and there was some shift of population to the south and east, reversing the previous movement. A Derating Act in 1929 reduced rates on industrial premises, but the newer industries still preferred the south and east: London spread into the countryside, raising problems of a generally social as well as an economic nature. The only lightening of the darkness that began to close on the old industrial regions of the North and Midlands and South Wales was the growth of the motor-car industry in the West Midlands. Britain had lost her lead in the Industrial Revolution; Japan had captured the Indian cotton-goods market; entrepreneurs were discouraged. In Germany the crisis took a serious political turn, and events began to move towards the menace of Nazism.

But before rearmament had come to rescue, ironically, Britain's heavy industries, the great depression of the nineteen-thirties stalked its way across the land. In Merthyr

Tydfil, South Wales, and in Jarrow the percentage of unemployed was 75 per cent. No one who has travelled through the stricken town of Merthyr at the time of the depression can forget the terrible face of that town, with its shuttered, silent streets, empty save for a group or two of men talking listlessly at street corners. Throughout the "Distressed Areas" an average of 35 per cent of the insured workers was unemployed.

Under the Special Areas (Development and Improvement) Act of 1934 these areas were designated "Special Areas", and the Treasury was to manage a Special Areas Fund established to assist these areas by public-works schemes, by providing work for the unemployed on the land and by transfer of unemployed workers to other areas. The latter provision necessarily had the effect of encouraging the drift from areas now becoming derelict, and increasing the congestion in the London area. In 1936-37 factories were offered at low rents, together with relief from rates, to firms setting up in the "Trading Estates" established in Durham, Cumberland, Central Scotland and South Wales; the Special Areas Amendment Act, 1937, made provision for loans to firms from Government funds. Training schemes for unemployed were provided by the Government.

Some hundred factories were established during the Second World War. The Industrial and Commercial Finance Corporation gave assistance to undertakings setting up in "Development Areas," as they now came to be called. Under the Distribution of Industry Act, 1945, a Development Areas Treasury Advisory Committee was appointed to advise the Treasury on the giving of financial assistance in the raising of capital to undertakings carried on or proposed to be carried on in a Development Area. Board of Trade approval was necessary, this approval being given to undertakings where they complied with the requirement as to the proper distribution of industry; and the Advisory Committee had to be satisfied that the undertaking was one likely ultimately to be able to pay its way. It was announced in October, 1952, that part of south-east Lancashire was to be scheduled as a Develop-

ment Area. The area depended on the cotton industry, and was seriously affected by the slump which began in 1951.

A Capital Issues Committee was set up in 1939; application to the Committee had to be made for a licence to issue shares or other securities. The Committee had to consider whether an undertaking wishing to raise money by the issue of securities would thereby assist the Government's investment programme, the expansion of exports, or the Government's policy of diversifying industry in Development Areas.

It is evident that from a "system" of free enterprise, or planning by individuals, the industrial scene generally had moved to a state of control and planning by Government agencies. Certainly, we shall see later how far we have moved from the early days of trade unionism to a time when representatives of the trade unions could sit on Regional Boards of Industry to advise the Government on industrial trends.

The legislation on Development Areas must not be regarded as a sudden leap in the Government's consciousness towards a realisation that some planning of industry was necessary to avoid the great mass-unemployment that has afflicted this country from time to time. The increasing confusion during world wars as industry became more complex; increasing dependence of the prosperity of large numbers of workers upon the state of markets; industrial progress and invention in other parts of the world—these made some such development inevitable; for mass unemployment is dangerous politically as well as economically. Before the First World War unemployment varied between about 2 and 10 per cent of workers; on an average, it was about 6 per cent. The number of insured workers was 9½ millions in 1923; 10½ millions in 1929; and more than 12 millions in 1937. In 1929 the number of unemployed people was over 1,300,000; in 1932, over 2,700,000, about 22 per cent of the insured workers.

In 1941 the British (National) Government published a White Paper, *Employment Policy*,* in which the Government stated that they accepted as one of their primary aims and responsibilities the maintenance of a high and stable level of

* Cmd. 6527.

employment after the war. The document was a cautious one; the substantive policy proposed was in effect public works. Lord Beveridge, a few years later, in his *Full Employment in a Free Society* (Allen and Unwin, 1944), considered that the employment policy proposed was mitigating only. His remedy was a much more drastic one, a long-term programme of planned outlay by the State, involving a revolution in national finance: the estimated income and outlay of the nation as a whole would be surveyed annually with reference to man-power, not to money; and a Minister of National Finance would budget for a total sufficient to employ the whole available man-power of the country.

It may be that such proposals do not take sufficiently into account that for a nation like ours, depending so much on exports, successful planning must be done not merely by our own Government, but by the Governments of other nations with which Great Britain has economic relations. The particular problem of the "Development Areas" may be solved by the measures which have been undertaken; but this does not solve the problem of unemployment as a whole. Under sufficiently disastrous circumstances, the whole of the country could become to all intents and purposes a Development Area.

The mal-distribution of industry resulted, as we have seen, in the congestion of London and the South-east, while the North became derelict. The cure, said Lord Beveridge, was the localisation of industry, and this policy has been implemented, as explained above.

It must be remembered, however, that the localisation of industry is not the answer to those periodic slumps which occurred, for example, in 1886, 1893 and 1904, and which so impressed some economists with a sense of rhythmic regularity in their occurrence that they gave the name of the "trade cycle" to them, and were inclined to believe that recovery was inevitable, a part of a phase of the "cycle". But there was no sign of an "inevitable" recovery from the depression which began in 1929 and reached its depth in 1931, with 2½ millions unemployed. Only by an armaments race was Britain rescued

from this unemployment crisis; and the price paid was as expensive as the depression, though it was paid in human suffering rather than in money.

The unemployment in the Lancashire cotton industry was not due to any mysterious "cycle", but to world affairs, and in particular to Japanese competition. It was the price paid for over-specialisation, involving a risk which was realised in its worst form. That is the true nature of the problem of the localisation of industry; and the value of the study of the historical circumstances of the problem can be demonstrated if this study can point the way to such improvements in the organisation of modern industry as will avoid this risk.

3. Factory Legislation

The early concentration of workpeople into factories involved social evils on the debit side of the industrial account. The advantages were obvious enough: the reduction in costs per unit of production and the possibility of large-scale production to meet the expanding markets.

Factories were no new thing: in a sense, there had been groups of men working together from earliest times, when men set up flint factories for tool-making. But never before had the herding together of people for mechanical work and machine-minding taken place on such a large scale; never before had the very essence of life revolved for so many people around work for an employer in a building, with leisure spent in mean houses, back-to-back in monotonous streets, without proper sanitation or water supply.

Similarly, the ill-treatment and exploitation of children were no new thing. Child labour had been common under the "domestic system". The toil and drudgery of the poorer classes had been endured by them for generations. It was the intensification of these evils to a degree such that the public conscience was appalled by them that gave them some chance of amelioration under the stimulus of the reformers' zeal.

The first half of the nineteenth century was lived in the

laissez-faire atmosphere. The Government was opposed to any interference with the "freedom of contract" between employer and employed—such "freedom" being an obvious fallacy when the alternative to work was starvation, and especially so in the case of children, who could not by any stretch of the imagination be said to have entered into a

FIRST HALF OF THE NINETEENTH CENTURY: *LAISSEZ-FAIRE*.
THE REFORMERS:

	Robert Owen (1771-1858).
	Jeremy Bentham (1748-1832).
	Lord Shaftesbury (1801-85).
1802	Health and Morals of Apprentices Act.
1819	Children in cotton mills: employment forbidden under 9; hours of work 12 per day. Ineffective.
1833	First effective Factory Act—Lord Ashley (later Lord Shaftesbury). Children 9-12: 48 hours per week. "Young Persons" 12-18: 69 hours per week. Inspectors appointed.
1842	Mines Act.
1844	Women protected. "Half-time" system for children.
1847	Ten Hours' Day.
1850	Act fixing definite hours of work. " <i>Laissez-faire</i> " now abandoned.
1860s	Extension to factories other than textile factories.
1878	Factory and Workshops Act—classified types of establishments. Provisions for cleanliness, ventilation, prevention of overcrowding, fencing of machinery, meals.
1875-1901	Consolidation in factory legislation.
1937	Factories Act: Health, Safety, Welfare.
1948	Amendments and additions to Factories Act, 1937.
1959	Factories Act: Consolidation and extension of existing legislation.

CHART II.—THE COURSE OF FACTORY LEGISLATION.

contract with the employer. Children toiled in mines; were stifled in chimneys; it was argued that leisure would be bad for them. Another fallacy was that all profit was made in the last hours of work—a peculiar psychological doctrine hardly less remarkable than some ideas held by amateurs to-day. It was disproved by Robert Owen (1771-1858), who, in his New Lanark mills, built a model village round his

factory, shortened the hours of work for his workers, instituted a scheme of co-partnership, and started schools for the children of his workers. His mills were as successful as his social schemes, and attracted wide attention. Not all his fellow-manufacturers approved of such doings; and he was discredited at last through the weapon afforded by his religious scepticism.

Other great reformers were Jeremy Bentham (1748-1832) and Lord Shaftesbury (1801-85), who, among other activities, championed the " Ragged School " movement.

The first Factory Act, the Health and Morals of Apprentices Act, was passed in 1802. This regulated the labour of pauper apprentices; and provision was made for the attendance of children at church. These pauper " apprentices " were children placed with manufacturers by the overseers of the parishes in the towns. They were provided with food and clothing by the manufacturers, who in return exacted long hours of work from them, often obliging them to eat their meals as they worked. Their sanitary conditions were terrible; and they grew up in most cases ignorant, debased and demoralised. The Health and Morals of Apprentices Act limited their daily hours to twelve, prohibited night work, and provided for some elementary instruction; there were regulations about ventilation, cleanliness and sleeping accommodation.

But the inspection of factories for the purposes of the Act was left to magistrates who were little disturbed about such things. By this time, too, apprentice labour was being replaced by the labour of " free " children, to whom the Act did not apply. " Free " children were obliged to work often as long as sixteen hours a day to bring in something to keep the home going, for the wages of the adults were small enough.

The evidence given before Committees examining the situation in factories * makes harrowing reading to a modern reader of sensitivity. Robert Owen, giving evidence before the Committee on Children in Manufactories, 1816, mentioned a little girl who was employed in a mill at Stockport at the age of four. Other and later Committees obtained evidence

* See, *e.g.*, Reference 2 in the Bibliography, p. 181.

of the forcible waking of children, so fatigued by their labours that they fell asleep with the food they were taking still in their mouths. Stories of beatings and of cruelties practised in the name of Production were common.

The result of these investigations was that an Act was passed in 1819, applying to children in cotton mills, forbidding their employment under the age of nine, and limiting their hours of work to twelve per day. No proof of age was required to be given; the magistrates were lax, and evasion was easy.

The first effective Factory Act was passed in 1833, through the efforts of Lord Shaftesbury (then Lord Ashley) and the followers of Jeremy Bentham. The Act forbade the employment in textile mills of children under nine, limited the hours of work of children between the ages of nine and twelve to forty-eight per week, and those of "young persons" between the ages of twelve and eighteen to sixty-nine per week. The Act was effective because four inspectors were appointed to enforce its provisions. It was important for them to ascertain the ages of the children, and when the registration of births became compulsory in 1837 this could be done.

In 1833, too, the Government made the first grant out of public funds for public education. In 1844 the age at which children could work was reduced to eight—a retrograde step—but between eight and thirteen years of age they had to attend school for part of the day, their hours under this "half-time" system being limited to six and a half per day. Women were protected by the Act of 1844 introducing the "half-time" system; they were included with young persons. There were certain provisions for guarding machinery.

A Commission of 1842 disclosed conditions in mines which filled the nation with horror. Children of both sexes were taken down the mines to work, in some districts at the age of four. Women and young girls did laborious and dangerous work, carrying coal in baskets up ladders, some crawling on all fours with chains between their legs. The Mines Act of 1842 prohibited the underground employment of women and girls and of boys under ten. Sir Humphry Davy's safety-lamp was invented in 1815; haulage was improved after 1840; and a

series of Mines Acts from 1850 onwards compelled better ventilation.

After the passing of the 1833 Act there was agitation for a ten-hours' day; and in 1847 an Act embodying this limitation of hours was passed. But the working day extended over fifteen hours—from 5.30 a.m. to 8.30 p.m.—and the shift system of work made evasion of the Act an easy matter. Lord Ashley was not one to let this pass. In 1850, an Act specified that the working day for women and young persons should extend from 6 a.m. to 6 p.m. (or from 7 a.m. to 7 p.m.), with one and a half hours for meals, the factories to close down at 2 p.m. on Saturdays. The weekly working hours were limited to sixty. There was a slight loss to the workers in the increase in hours, but a great advantage gained in that provisions were made for enforcing the legal standards laid down.

The middle of the century had thus been reached without any legislation directed to the improvement of the conditions of adult male workers. But indirectly the men benefited, for their work was dependent upon that of the women and young people. The attitude of *laissez-faire* had been abandoned—at least as far as textile factories were concerned.

The employers tried to turn the clock back; but not only did the pace of Government intervention increase; its scope was also enlarged. In 1860 a Bleach and Dye Works Act was passed: it was followed by other Acts, and the law relating to factories in which bleaching, dyeing and printing were carried on was consolidated in an Act of 1870.

In 1864 the scope of factory regulations was extended to factories having no connection with textiles, including those engaged in manufacturing lucifer matches, percussion caps, cartridges and earthenware. The Factory Act of 1864 also made provision for ventilation and sanitation. The 1867 Factory Acts Extension Act extended the application of the law to other industries, including iron and engineering, paper, glass, printing, book-binding and tobacco. This Act applied to the processes mentioned in the Act whatever the number of persons employed, also generally to all other establishments in

which fifty or more persons were employed. Previous legislation had been limited to factories employing more than fifty workpeople and using motive power, and unscrupulous employers could evade the provisions of the Acts by claiming that they employed less than fifty persons. The Workshop Regulation Act of 1867 defined a workshop as a place other than a factory in which a handicraft was carried on by children or young persons or women under the control of an employer, and the regulations applied only to such places if fewer than fifty persons were employed.

This Workshop Act repeated the faults of early factory legislation; it was permissive only; and its enforcement was left to the local authorities, whose outlook was still that of the first half of the nineteenth century. The Factory and Workshops Act of 1871 transferred the general duty of enforcement of the law to factory inspectors appointed by the Home Office; the local authorities retained their supervision of sanitary conditions under the Sanitary Act, 1866.

The Factory and Workshops Act of 1878 classified various types of establishments; workshops were now distinguished from factories by the non-use of mechanical power. The work of children in "domestic workshops"—rooms in private houses where work was carried on—was regulated. Women's workshops and domestic workshops were exempted from sanitary regulation, except that laid down in the Public Health Act of 1875. There were regulations for the fencing of machinery in factories. The exemptions relating to women's workshops were abolished under an Act of 1891.

The last quarter of the nineteenth century was one of consolidation in factory legislation. The Home Secretary was given powers relating to dangerous trades under the Factory and Workshops Act of 1891, a consolidating Act making provisions for sanitary arrangements; it raised the age at which children might work in factories to eleven (an Act of 1874 had raised it to ten). The Factory Act of 1895 brought under control docks, wharves, quays and laundries; it limited the hours of work of children to thirty a week and forbade the employment of children under fourteen in night work.

The Factory and Workshop Consolidation Act of 1901 made further provisions for health and safety, and raised the minimum age at which children might be employed in factories to twelve; the age was raised to fourteen in 1920. The Factories Act of 1937 followed broadly the lines of the 1901 Act, which it replaced, but contained many new provisions based upon current practice. It reduced the permissible working hours for women and young persons, basing the hours on a forty-eight-hour week, with a forty-four-hour week for persons under sixteen. It abolished the old distinctions between a factory and a workshop and between a textile and a non-textile factory, only one term, "factory", being employed. It was altered and added to by the Factories Act, 1948; the Factories Act, 1959, consolidated and extended existing legislation. After the Second World War began, the functions of the Home Secretary in relation to factories legislation were transferred to the Ministry of Labour and National Service.

The history of factory legislation, like the history of the railways, exhibits the reluctant abandonment of the old *laissez-faire* principle in the face of the compulsion of circumstances, and the subsequent co-operation and control by the Government in industrial affairs. It illustrates a fact so often forgotten in academic discussion of historical processes: that the "Government" is not an abstraction but a number of people of flesh and blood who, in general, are the result of their upbringing and environment; who have a niche in life which they want to maintain; and whose prejudices and passions will be determined accordingly. In the nineteenth century the "Government" consisted of a distinct ruling class, a class which contained, after the 1832 Reform Act, a number of wealthy industrialists whose interests were in many ways opposed to those of the mass of the people. Though the party system had been already established, and there was a distinction to be drawn between Liberals and Conservatives, the differences between them were minor compared with the differences between them and the great majority of the population. Both parties represented wealth and power;

both were determined to keep that power; and both were afraid of the revolutionary ideas which were spreading from the Continent. These facts are strikingly illustrated in the early history of trade unionism.

4. Trade Unionism

Though too close a parallel must not be drawn between the modern trade-union movement and the guilds of medieval times, it is too great an exaggeration to say that they were totally dissimilar. Attempts to over-emphasise the differences may arise from an inclination on the part of academic historians to ignore the modern industrial scene as a regrettable excrescence having little in common with the course of the interplay of kings, policies and politicians which have formed so large a part of the study of national history. The journeymen of medieval times who had little hope of achieving the status and wealth of masters were conscious of the need for combination against the power of the employers; and, indeed, an Act passed in 1548 was a medieval counterpart of the Combination Acts of 1799 and 1800 in that it was an attempt to suppress the journeymen guilds formed to protect the interests of the journeymen as against the power of the masters.

In point of fact, we must look at the medieval scene to see the beginnings of the capitalist system—a system in which the greater part of the national resources was originally in the hands of a comparatively few people, who exploited those resources for the sake of private profit. The expanding market, the rise of the merchant class, were the features of a commercial revolution which paved the way for the Industrial Revolution. It was only when the Industrial Revolution was in full tide that tendencies already discernible could also achieve a flood recognisable as “movements”.

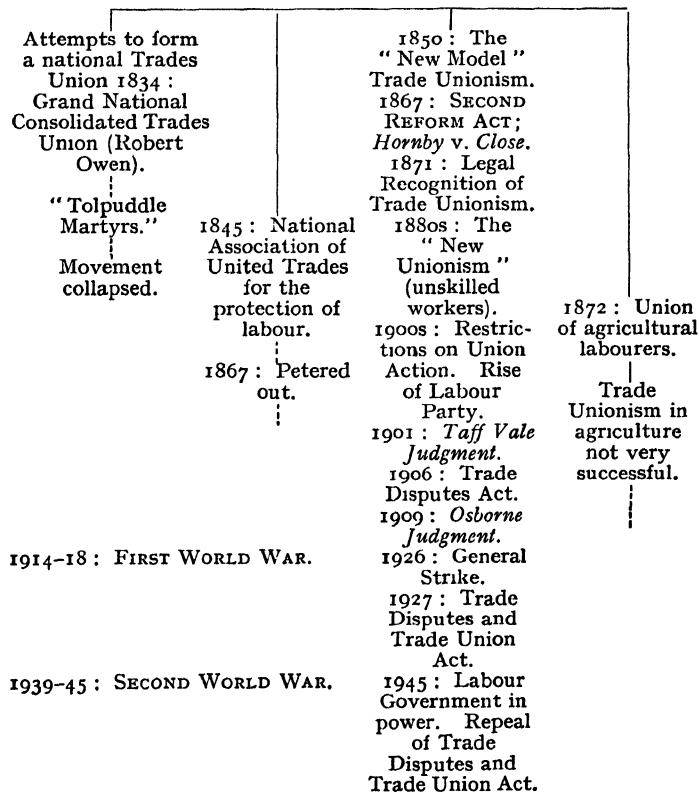
It was only natural that employers, who reserved to themselves full freedom to try to force down wages and to apply the *laissez-faire* doctrine as it favoured their interests, should attempt suppression of acts calculated by the workers to force up wages. Already, in 1749, an Act had been passed

prohibiting unions of workmen in the textile industry, in metal-working and in other specified industries. When the French Revolution broke out, the fear of popular combination

1799. } Combination Acts.
1800. }

1824. Combination Acts repealed (Joseph Hume and Francis Place).

1832. FIRST REFORM ACT.



1914-18 : FIRST WORLD WAR.

1939-45 : SECOND WORLD WAR.

CHART 12.—THE LINES OF DEVELOPMENT OF BRITISH TRADE UNIONISM.

was intensified, and the Combination Acts of 1799 and 1800 declared unions illegal: it was a criminal offence for workmen to combine to try to secure an improvement in their conditions of work, and for a man to persuade another to leave his work. Funds raised for such purposes were liable to confiscation—half of the money going to the informer. Friendly societies, in the form of local clubs only, were permitted.

An effect of the Combination Laws was to drive the trade unions "underground": workmen's associations were formed as secret societies or disguised as friendly societies. In some districts the unions were regarded with a certain amount of tolerance; but in the industrial districts the law was enforced with severity by the masters, who were themselves nominally subject to the laws against combination, but against whom no prosecutions ever took place.

The acute dissatisfaction felt by the workmen against these repressive measures found expression in riots and conspiracies, especially when the brave new world expected at the conclusion of the Napoleonic Wars failed to materialise. The Luddite machine-breaking of 1811-12 in Nottinghamshire, Derbyshire, Leicestershire and Yorkshire, was the response to unemployment consequent upon the introduction of machinery. The acute unrest following the conclusion of peace led the Government to pass the Six Acts of 1819, restricting public meetings, placing a heavy stamp duty on workmen's publications, and prohibiting the possession of arms and the practice of military training for unlawful purposes.

But Radical leaders, placing more faith in constitutional reform than in violence, pressed for the lifting of repression. At their head were Joseph Hume and Francis Place. Their efforts resulted in the setting up of a Commission of Enquiry and the subsequent repeal of the Combination Laws in 1824. The Commission had pointed to the dangers likely to arise from the formation of secret societies and the violence which might result from suppression. In point of fact, the lifting of restriction seemed to call forth this violence, for the repeal of the Combination Laws was immediately followed by an outburst of strikes which convinced the employers that the

workers were going to make the maximum use of their new freedom. The Combination Repeal Act was therefore amended by an Act of 1825 which continued to make the combination of workers for dealing with questions of hours and wages legal, but which contained clauses prohibiting "molestation" and "obstruction" which could be given a very elastic interpretation by the judges. Intimidation, molestation and obstruction were not to be used to force a workman to leave his work, nor to induce a workman to belong to any club or association, nor to prevent him from accepting employment, nor to force a manufacturer to make any alteration in the way he conducted his business. The result was to make common effective action by workmen within the law exceedingly difficult.

The Reform Act of 1832 disappointed the workmen. Attempts were now made to form a general trades union covering all workmen; a leading spirit in this movement was Robert Owen, whose efforts resulted in the formation in 1834 of the Grand National Consolidated Trades Union. Its inspiration, under the leadership of Owen, was socialist; it aimed finally at taking over industry and re-organising it co-operatively. As usual, Owen was ahead of his time; and a depression in trade following the formation of this Union until 1840 was unfavourable to its further development. Its prestige suffered enormously when, under a practically obsolete Act of 1797 making punishable the administering of an oath to members of an association, six Dorset labourers who had joined the Union were sentenced in 1834 to transportation to Australia. Demonstrations against the severity of the sentence failed to save these "Tolpuddle Martyrs". The workers were given a lesson which they never forgot—and have not forgotten to this day.

The project for a united trades union for the country failed; but this was merely a line of development which circumstances made it undesirable to follow. Another line of evolution was taken. Many of the local trade clubs forming the structure of the Grand National Consolidated Trades Union remained in existence; and in the forties there was a revival of trade

unionism. In 1845 a National Association of United Trades for the Protection of Labour was formed. This was intended to be, not a national trades union, but a central machinery for common consultation and protection, seeking an understanding with employers, and trying to improve conditions without resort to strike action. The depression of the "Hungry Forties" militated against its success, and it lasted only until 1867.

The National Association was, however, an indication of how the spirit of trade unionism was changing. The culmination of the change was fulfilled in the formation, in 1851, of the Amalgamated Society of Engineers. Here, indeed, was an association with strong likenesses to the medieval guilds. It consisted of the aristocracy of workers: the skilled workers. The contribution was a shilling a week—quite a substantial sum in those days. The society was not merely a union for the protection of labour and providing for strike pay; it was also a friendly society, providing sick, superannuation and other benefits.

The Amalgamated Society of Engineers became the model for future trade union organisation—hence the name sometimes given to the movement which followed: the "New Model" Trade Unionism (though it may be a source of confusion that the trade-union movement for skilled workers is also called the "Old Unionism" to distinguish it from the trade unionism comprising the unskilled workers: the "New Unionism"). The carpenters and joiners reorganised themselves on similar lines to form the Amalgamated Society of Carpenters and Joiners; the boilermakers formed the Boilermakers' and Iron Shipbuilders' Society. For his weekly shilling in the sixties, the artisan carpenter got unemployment benefit up to 10s. a week, sick benefit up to 12s. a week, accident benefit up to £100, funeral benefit of £12, a pension up to 8s. a week and emigration benefit of £6. The day of the trade-union officials had come; and from this time onwards the union official began to exercise an increasing influence on the affairs of Parliament.

In 1867 the Second Reform Act gave the vote to the skilled

worker of the towns. In the following year the first Trades Union Congress was held in Manchester to co-ordinate the activities of the trade unions. In 1869 the Congress appointed a Parliamentary Committee to further the interests of the trade unions in Parliament; in 1900 a conference convened by the Trades Union Congress to find means of securing working-class representation in Parliament initiated the Parliamentary Labour Party. The Congress became the "annual parliament" of the organised workers.

In the meantime events were moving to somewhat dramatic climaxes. The employers had viewed the growing power of the unions with alarm, and were casting about to find means of discrediting them so that further repression could be undertaken. The "Sheffield Outrages", consisting of attacks on non-members by certain small unions, seemed to support their case. In 1867 the verdict in a case, *Hornby v. Close*, came as a blow to the unions. The Boilermakers' and Iron Shipbuilders' Bradford branch instituted proceedings against its treasurer for wrongfully withholding £24. It was decided that a trade union, being a body formed "in restraint of trade", was illegal at common law, and so could not take proceedings in a court of law. The larger unions were astounded to learn that they were not protected against defaulting officials by the Friendly Society Act of 1855, under which they had been registered.

The affairs of the unions seemed to be in a sombre state. But they soon began to mend. The Trade Union (Protection of Funds) Act, 1869, gave the unions protection in relation to their funds. To a Royal Commission of Enquiry appointed to enquire into the position of trade unions it was demonstrated that the larger unions had nothing to do with the Sheffield Outrages, and that there was a case for making the unions legal. The majority report was far from enthusiastic in the cause of trade unionism, but the minority report, signed by the Earl of Lichfield, Thomas Hughes and Frederic Harrison, was more favourable, and contained constructive suggestions for the amendment of the law.

A Liberal Government accepted the proposals of the

minority report; the Trade Union Act of 1871 removed the character of criminal conspiracy from membership of a trade union. But at the same time a Criminal Law Amendment Act was passed, giving magistrates power to pass a term of imprisonment upon a workman using "threats" to another: in effect, the Act virtually made strike action impossible. A number of workmen were, in fact, punished during the next few years for picketing.

It says much for the growing power of the trade-union element in the community that the refusal of the Liberals to modify the law relating to picketing cost them the trade-union vote in the general election of 1874; and that it was a Conservative Government which repealed the Criminal Law Amendment Act of 1871 and replaced it by the Conspiracy and Protection of Property Act, 1875, under which an agreement between two or more persons was not criminal if the action agreed upon would not be criminal were it done by one person: the effect was to legalise picketing, and, in general, to enable the unions to carry on trade-union activity without the fear of constant threats of being taken to law.

The depression of the seventies was not favourable to trade-union activities; indeed, some of the smaller unions disappeared. Through the efforts of Joseph Arch, a union of agricultural labourers was founded in 1872, but the combined opposition of the propertied and feudal-thinking classes, the landlords, farmers and clergy, were for a time too strong for it: it died in 1894. Efforts were made to revive trade-union activity among farm labourers, and an Eastern Counties' Agricultural Labourers' Union was formed. Close control of agriculture during the First World War gave little scope for development. Trade-union activity in agriculture has not been carried on with the intensity with which it has been pursued in the towns. In 1924 the Minister of Agriculture and Fisheries was required to set up Agricultural Wages Committees to fix minimum rates of wages; and wage adjustments and Holidays With Pay arrangements have been made subsequently by an Agricultural Wages Board constituted by the Minister of Labour and National Service.

In industry the growing power of the unions induced employers to form, in 1873, a National Federation of Employers to safeguard their own interests: the wheels of destiny had indeed turned.

In the eighteen-eighties yet another phase of trade unionism was begun. In 1888, under the inspiration of Annie Besant, a theosophist, girls engaged in match manufacture came out on strike, and gained their demands. The trade-union movement surged in the ranks of the unskilled, under the leadership of such men as Ben Tillett, John Burns, Tom Mann and Will Thorne. The gas workers, under the leadership of Burns, obtained their demands for shorter working hours without a strike; but the dock workers, led by Burns and Mann, were refused a minimum wage of 6*d.* an hour, and hastened to form themselves into a union. There was much public sympathy for the dockers, as there had been for the match girls—indeed, £48,000 was raised by public subscription for a strike fund, £30,000 of it coming from Australia. The Dock Strike of 1889 was successful, and the “New Unionism”, the combining of unskilled workers into unions, was successfully launched.

This was the age of the idealistic-socialistic body of thinking which was to form the intellectual part of the new Labour Party movement, the actual sinews of war being provided by the subscriptions and activities of the trade unionists. The Fabian Society was founded in London in 1883, among its earliest members being Sidney Webb (later Lord Passfield) and George Bernard Shaw; H. G. Wells joined, but proved an awkward colleague. The Fabians showed themselves to be an earnest body of intellectuals whose conception of democracy would appear to be a kind of benevolent dictatorship directed by only the best theoretical Socialist thinkers; but the philosophical and mental background of which their ideas formed a part had a great deal to do with the subsequent somewhat curious alliance of the theoretical type of Socialists, often coming from the best families and with a public-school education, with the trade-union official and labour leader who actually conducted the work of organising the unions of the rank-and-file workers. It is of these two diverse elements

that the British Labour Party is composed; and it is only in the nineteen-fifties that the beginnings of the breaking apart of these two elements can be discerned.

Karl Marx's drab if formidable writings on Socialism began to bear fruit in England in the eighteen-eighties, when his teaching was expounded by enthusiasts in this country. But the British working-man, suspicious of pseudo-intellectual revolutionary creeds, preferred the solidier method of constitutional progress. In 1888 Keir Hardie helped to found the Scottish Labour Party, the first Labour Party in Britain, with a Liberal programme. The Fabians supported the new movement; and in 1892 three Labour candidates were returned at the General Election. In 1893 the Independent Labour Party was formed, its ultimate aim being the collective ownership and control of the means of production, distribution and exchange. Its trade-union members were drawn mainly from the new unions; and they had to work against the apathy of the older unions. At the 1899 Congress it was decided to call a conference of trade unions, co-operative societies and socialist organisations so that Labour representation in the House of Commons should be promoted. This Conference met in 1900, and the Labour Representation Committee was formed; its Secretary was J. Ramsay MacDonald, later to become Prime Minister.

As a parliamentary force, the Labour Party reached a position of political influence in 1906, when twenty-nine out of its fifty candidates were elected. Until 1918 its membership was drawn mainly from trade unions and socialist societies, but in the new world born after the First World War it widened its scope to include people of all social grades.

It would seem that this 1906 political triumph was the result of the blow given to trade unionism by the Taff Vale Judgment of 1901. The Taff Vale Railway Company sued the Amalgamated Society of Railway Servants for damages caused through inducing workmen to strike. The case was carried to the House of Lords, and, to the consternation of the unions, who believed that they were protected by the 1871 and 1875 Acts, the House of Lords held that trade unions were liable for

the acts of their officials, when those acts were done by the officials acting on behalf of the union. Damages of £23,000 were awarded against the Amalgamated Society of Railway Servants. The unions found themselves faced with the prospect of losing their funds if they organised a strike.

The Trade Disputes Act, 1906, made the unions free of this danger of civil liability; it was passed by a Liberal Government influenced by the Labour members.

A year or two later, another blow was struck at the unions, this time from within. The Labour Party depended for financial support for its political activities mainly on the levy made on members of the unions. In 1909 Mr. W. V. Osborne, a member of the Amalgamated Society of Railway Servants, obtained a judgment in the House of Lords that trade unions had not the power to levy contributions from members for the purpose of securing parliamentary representation. Until this judgment was cancelled by the Trade Union Act, 1913, most of the important unions were precluded by injunctions from contributing to the funds of the Labour Party. The 1913 Act stipulated that the objects of a levy must be agreed to by a majority of members, and that the minority should be able to "contract out", *i.e.* to state specifically that they did not wish to contribute.

The First World War gave an impetus to trade unionism, especially among women, who were now employed intensively in industry, as they were to be again during and after the Second World War, this employment resulting in the creation of social problems with which it is beyond the scope of this book to deal. After the post-war boom, depression set in. Unemployment occurred and wages fell. Unrest was rife. A reduction in miners' wages led to a strike of all trades in their support. The General Strike of 1926 was broken by the new middle classes, the smaller professional and "black-coated" workers, who manned the trains and other essential services. The strike lasted only ten days.

In consequence of the General Strike, which was obviously aimed at forcing the Government to subsidise wages, the Trade

Disputes and Trade Union Act of 1927 was passed. Its terms reflected the intensity of feeling aroused by the strike in the Government. It declared illegal strikes and lock-outs which went beyond the purposes of a trade dispute, being designed to coerce the Government directly or by inflicting hardship upon the community generally; it made it illegal to apply sums in furtherance of an illegal strike or lock-out; criminal proceedings could be instituted against any person who incited others to take part in an illegal strike. The law of picketing was made more rigid. The principle of "contracting-in" was substituted for the principle of "contracting-out": no person could be compelled to subscribe to the funds of a political party unless he specifically gave notice of his desire to do so.

The Act contained clauses which indicated the determination of the Government that there should not again occur the possibility of a national breakdown in industrial organisation. Members of the Civil Service were prohibited from becoming members of a union with political objects, and Civil Service unions were prohibited from becoming affiliated with any other industrial or political organisations. Local or other authorities were not allowed to make it a condition of employment that any person employed by the authority should or should not be a member of a trade union; an employee of a local or other public authority who broke his contract of service with the authority knowing that by so doing he would be likely to cause danger or grave inconvenience to the community was liable to prosecution.

The Act was cordially disliked by members of the Labour Party. When, for the first time, the Labour Party reached a position of power (as distinct merely from gaining office) in 1945, one of its first acts was to repeal the Trade Disputes and Trade Union Act of 1927. This was done in 1946, and the trade unions were placed in the same position as they were in before the General Strike of 1926.

Thus, the trade unions reached a position of great importance in the State. On the nationalisation of the great basic industries, coal, gas, electricity, transport, representation on

consultative councils to the Boards was given them as a matter of course.

The political activities of trade unions have not been without their critics. There have been those who have stated it as their view that the unions have gone beyond their true functions in concerning themselves directly with politics—their objects are essentially economic. Certainly those prominent members of unions who have taken up political posts have often been embarrassed by the activities of the rank-and-file, who have, in their turn, complained that those who have reached high positions in the State have tended to forget the interests of their more lowly-placed comrades. The flinging wide of the net of the Labour Party to include men and women of all social grades has tended to make it much less of a trade-union party; whilst many trade unionists and other wage-earners belong to other parties (two-thirds of the electorate are wage-earners and their dependents, but until 1945 the Labour Party never secured more than 37 per cent of the votes cast). The Labour Party has thus become more "socialist" than "labour"; and a Labour Government may be as much embarrassed by trade-union activities in industrial disputes as a Conservative one.

We shall now turn our attention to the history of conciliation and arbitration in industrial disputes and the conduct of industrial negotiation generally.

5. The Development of Conciliation and Arbitration in Industry

The extent of the damage which might be done to both parties in a dispute, as well as to the public in general and to the development of harmonious relations between employers and employed, was recognised in effect by the founders of the "New Model" Trade Unionism. As the State began to play a more definite part in the industrial affairs of the country, and the principle of *laissez-faire* was finally abandoned, the Government looked with increasing concern at the field of industrial relations generally; and in 1891 a Royal Commission was set up "to enquire into the relations between

employers and workmen and to report whether legislation could be directed to remedy any faults disclosed ”.

The recommendations of the Commission were followed in the Conciliation Act, 1896, which gave certain powers to the Board of Trade; these powers, subsequently transferred to the Ministry of Labour and National Service, were:

- (1) To enquire into the causes and circumstances of a dispute.
- (2) To take steps to bring the parties together.
- (3) To appoint a conciliator or board of conciliators on the application of employers or workers.
- (4) To appoint an arbitrator on the application of both parties.

Conciliation Officers were appointed, and their services have proved valuable in bringing parties to a dispute to agree upon measures which have avoided resort to the arbitrament of strike or lock-out.

The First World War gave rise to much industrial unrest, and in 1916 a Committee on the Relations between Employers and Employed was set up; from the name of its Chairman, J. H. Whitley, this Committee became known as the Whitley Committee, and the device of joint consultative machinery which it recommended became known generally as “ Whitley-ism ”. The terms of reference of the Committee were to make and consider suggestions for securing a permanent improvement in the relations between employers and workmen, and to recommend means of securing the systematic review of industrial conditions affecting those relations, with a view to improving conditions in the future.

The Committee made five recommendations:

(1) THE FORMATION OF JOINT INDUSTRIAL COUNCILS OF EMPLOYERS AND EMPLOYED.

Joint Standing Industrial Councils were formed in those industries which had not already an effective machinery for collective bargaining, such as in coal-mining and engineering. They vary greatly in scope and structure, and have been

applied with government approval to the Civil Service and to local authorities. Besides providing machinery for negotiation, collective bargaining and the settlement of disputes, these Councils have discussed other matters, such as technical education, training and research. Labour opinion was not very much in favour of this device, but it has proved effective in many instances, notably in the flour-milling industry.

(2) THE APPOINTMENT OF WORKS COMMITTEES REPRESENTATIVE OF MANAGEMENT AND WORKERS IN INDIVIDUAL UNDERTAKINGS.

This recommendation has also been carried out, though with varying success. It would appear that in many cases the workers have looked upon Works Committees, or Works Councils (often generally referred to as "Joint Consultative Committees"), merely as means by which relatively minor grievances could be "ventilated". On the other hand, it is urged that it is just these so-called minor matters, such as lighting, ventilation and amenities generally, which loom largest in the life of a worker so far as his conditions within the factory are concerned. Personal investigation of various factories by the author has led him to the general conclusion that neither management nor men have interpreted the functions of Works Councils as including anything that may be regarded as being within the managerial sphere of the executives; on the other hand, the "Happy Family" view of relations between management and men in these Councils is an exaggeration.

Works Councils must be distinguished from the Joint Production Councils set up during the Second World War with a more definite and technical scope.

On the wider issue of how far workers have taken a share in management in recent years, it must be remembered that from the definition of terms, there is an inherent contradiction here: somebody must be the "boss". Certainly, a number of profit-sharing schemes have proved successful in individual industries, notably in the gas industry. As long ago as 1884

the Industrial Co-partnership Association was founded to propagate the principle of a worker sharing in the profits of industry and, by accumulating such shares of profits, becoming a shareholder.

But profit-sharing is not synonymous with co-partnership. No genuine co-partnership between workers and owners, between "Labour" and "Capital", can occur if workers do not share losses as well as profits; and this the workers have proved unwilling to do. Apart from the Co-operative movement, co-partnership in industry has made little progress in this country. In 1910 there were 121 firms with co-partnership schemes, with 57,000 participant-employees; in 1952 there were a little over 300, with 200,000 participants—less than half of the total employed population participate in such schemes. Co-partnership schemes are operated by about sixty gas, water, and electricity supply undertakings; by about forty metal, engineering, and ship-building undertakings; some glass, chemical, and soap undertakings; and by a few financial firms.

(3) THE STATUTORY REGULATION OF WAGES IN BADLY-ORGANISED TRADES.

The Trade Boards Acts, 1909 and 1918, gave the Minister of Labour power to establish Trade Boards for the fixing of minimum rates of wages where he was of the opinion that no adequate machinery existed for the effective regulation of wages throughout the trade. These Acts were replaced by the Wages Councils Acts, 1945-59; Wages Councils, with wider powers than the old Trade Boards, replaced the latter: they determine a statutory minimum wage by a process of negotiation, the Minister then making an Order which is legally binding. The Wages Councils Act, 1959, consolidated the law relating to wages councils.

In agriculture, County Agricultural Wages Committees were set up by the Ministry of Agriculture and Fisheries to fix minimum wages, under an Act of 1924. In 1942 these powers were transferred to an Agricultural Wages Board constituted by the Minister of Labour and National Service.

(4) THE ESTABLISHMENT OF A PERMANENT COURT OF ARBITRATION; and (5) THE AUTHORISATION OF THE MINISTER OF LABOUR TO HOLD ENQUIRIES REGARDING DISPUTES.

These two recommendations were followed in the Industrial Courts Act, 1919, which established an Industrial Court as a permanent and independent tribunal appointed by the Minister of Labour and National Service from representatives of employers and workmen and independent persons, and in addition one or more women. Either of the parties involved in a trade dispute may refer the matter to the Minister, who must then take such steps as appear to him to be expedient. With the consent of both parties he may, if he thinks fit, refer the matter for arbitration to the Industrial Court; though, if the parties prefer it, he may refer the matter to an arbitrator or a Board of Arbitration with equal representation of employers and work-people. Arbitration awards under the Conciliation Act or Industrial Courts Act are not legally binding on the parties, but they are usually accepted by them.

Even during the Second World War, voluntary negotiation as opposed to State compulsion was maintained so far as possible, as in the Conditions of Labour and National Arbitration Order, 1940, and the Restoration of Pre-War Trade Practices Act, 1942. The policy of the Government has been to allow disputes to be settled by the negotiating machinery built up by industry. Where such effective machinery has been built up, the Ministry of Labour normally does little else but appoint independent chairmen, and in other industries, only when the usual negotiation methods have been found to fail will the Ministry intervene, its conciliation officers operating locally and the Ministry dealing with nation-wide disputes.

The Industrial Courts Act laid it down that action under the Act was to be taken only where the normal procedure of negotiation possible to the parties was exhausted. The Act also provided for the establishment of Courts of Inquiry composed of independent members appointed by the Minister: where any trade dispute exists or is apprehended the Minister may, whether the dispute has been reported to him or not,

enquire into the circumstances, and may refer the matter for investigation to a Court of Inquiry. The recommendations of the Court are not enforceable at law; but until 1951 there

1891 : Royal Commission set up to enquire into industrial relations.

CONCILIATION ACT, 1896.

Appointment of Conciliation Officers.

1914-18 : FIRST WORLD WAR.

1916 : WHITLEY COMMITTEE.

Recommendations :

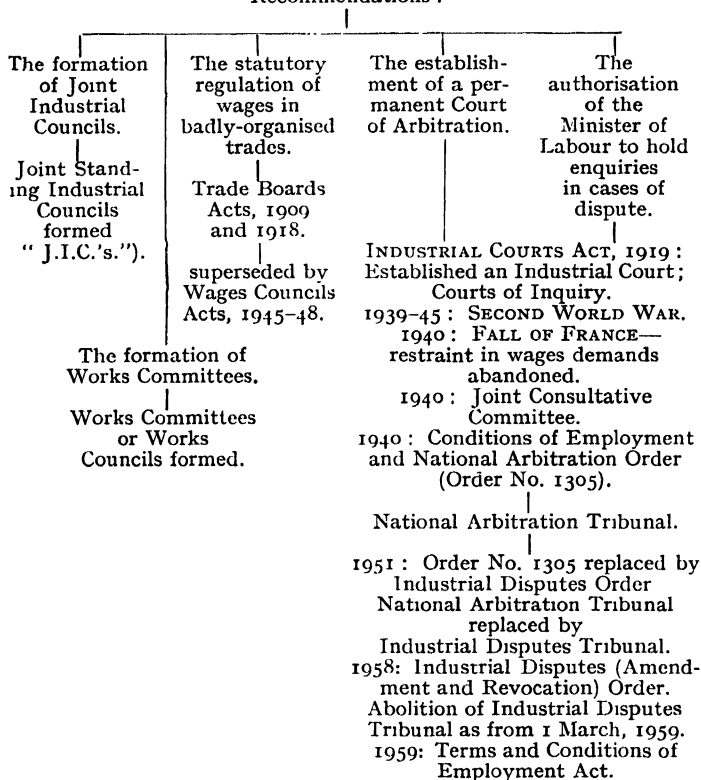


CHART 13.—THE DEVELOPMENT OF THE MACHINERY FOR CONCILIATION AND ARBITRATION IN BRITISH INDUSTRY.

was practically no known record of a recommendation being rejected—in that year the railwaymen rejected a recommendation of a Court of Inquiry.

Introduction of the compulsory arbitration principle into industrial relations came during the Second World War; after the Fall of France in 1940 it became imperative for the safety of the State that war production should be maintained and increased. In May, 1940, a Joint Consultative Committee, consisting of representatives of the British Employers' Federation and representatives of the Trades Union Congress, was appointed by the National Joint Advisory Council to advise and assist the Minister on matters arising during the period of emergency. As a result of the recommendations of the committee, a Defence Regulation empowered the Minister of Labour and National Service to make an order prohibiting a strike or lock-out in connection with any trade dispute. The Conditions of Employment and National Arbitration Order came into force in July, 1940. Amending orders were subsequently made without changing the principle or main provisions of the 1940 Order.

The Order established a National Arbitration Tribunal, to which the Minister was obliged to refer a dispute where there had been failure to reach a settlement, there was undue delay in the making of a settlement, or there was no suitable joint machinery in existence and conciliation attempts had failed. Any agreement, decision or award resulting from references by the Minister to existing joint machinery or to the National Arbitration Tribunal was made binding upon the parties.

Strikes and lock-outs were prohibited unless the disputes had been reported to the Minister and had not been referred by him for settlement within twenty-one days from the date on which they were reported. Employers were required to observe terms and conditions not less favourable than "recognised terms and conditions", *i.e.* terms and conditions of employment which had been settled by machinery of negotiation or arbitration to which the parties were organisations of employers and trade unions.

The Restoration of Pre-War Trade Practices Act, 1942,

provided for the post-war restoration of trade practices departed from during the war. The trade unions cordially disliked the 1940 Order (known as Order No. 1305), especially Part Two, prohibiting strikes and lock-outs unless they had been reported to the Minister and had not been referred by him for settlement within twenty-one days; they felt that the competence of the National Arbitration Tribunal should be limited.

After considerable agitation the 1940 Order was revoked by a Labour Government a little time before its defeat in October, 1951. The Conditions of Employment and National Arbitration Orders, 1940 to 1950, were repealed in August, 1951, and replaced by the Industrial Disputes Order, 1951. The provision relating to the illegality of strikes and lock-outs was omitted, and the National Arbitration Tribunal was replaced by the Industrial Disputes Tribunal, whose decisions were, ultimately, unenforceable against the unions; so that a Minister might refuse to adopt the arbitration procedure and refer a matter in dispute to a Court of Inquiry.

In the meantime, in February, 1951, a number of dockers had been charged with conspiring to incite others to take part in an illegal strike, no trade dispute between the Merseyside dockers and employers having been reported to the Minister under Order No. 1305. Nearly 7,500 London dockers staged a token strike in support of the accused men, and seventy-three ships were idle and thirty-two undermanned as a result in the West India and London docks. The incident is important as illustrating the feeling provoked against the implementing of the principle of compulsory arbitration.

The machinery set up by the Industrial Disputes Order, 1951, for the compulsory settlement of disputes was brought to an end by the Industrial Disputes (Amendment and Revocation) Order, 1958: the Order of 1951 was not to apply to any dispute or issue not reported to the Minister before 10 December, 1958, and the Order was revoked as from 1 March, 1959. The Terms and Conditions of Employment Act, 1959, provided machinery for the determination by the Industrial Court of questions concerning recognised terms and conditions of

employment, in place of that formerly provided by the Industrial Disputes Order.

Stoppages of work arising from disputes in the United Kingdom during the first three years following the Second World War caused the loss of 2 million working days each year at the establishments where the stoppages occurred. During succeeding years, the time lost was less than 2 million, but rose to 2½ million working days in 1954-5. In 1955-6, nearly 3,800,000 working days were lost, three-quarters of them in transport and coal-mining.

The longest rail strike in British history took place in 1955, ending on 14 June after seventeen days. It cost the British Transport Commission over £15 million in forfeited revenue, and caused a great diversion of traffic from rail to road—some of this diversion, no doubt, to prove permanent. The Associated Society of Locomotive Engineers and Firemen, which had been responsible for the strike on a question of “differentials” in wages, obtained little enough materially for their efforts, though it might be claimed that morally “’twas a glorious victory”.

Meantime, in May, 1955, a dock strike had been called, as a result of a dispute between the National Amalgamated Stevedores and Dockers' Union and the Transport and General Workers' Union over a question of “poaching” of members. It lasted six weeks—one of the longest, costliest and bitterest strikes since the war.

In July, 1956, occurred a significant development: a strike—a most reluctant one, it would appear, as far as at least half the men in it were concerned—was called by the unions against summary dismissal of men by the British Motor Corporation on the ground of redundancy. Questions of compensation and consultation were raised by the unions; and, on the other side, there was brought up the suggestion of a secret ballot in relation to strike action.

In February, 1960, a railway strike was narrowly averted; and men stayed underground at a coal mine as a protest against the threat of redundancy.

CHAPTER X

THE MANAGERIAL REVOLUTION

I. Combinations, Monopolies and Restrictive Practices

As is so often the case in historical development, the beginnings of significant features of modern Western civilisation are to be found early in our history. Capitalism began with the guilds; it started to be significant at the time of the rise of the merchant class; and reached its culminating point in the gathering of vast resources and the hiring for wages of large numbers of people by comparatively small groups of wealthy people during the Industrial Revolution. Quite apart from the question of technical advances, it is the problem of the relation between economic and political and social power which should be of greatest moment to the modern historian, whose concern is more with people than with individual rulers or social abstractions.

The necessity for the control of large amounts of capital and for the restriction of competition, so far as possible, led to combination and monopoly in business organisation; though pure monopoly, in which an undertaking has full control over the production and distribution of a commodity *and its substitutes*, is very rare. A modern approach to this type of organisation has been the Coffee Institute of Brazil.

Two main lines of development were followed: vertical combination, or trusts, in which control is secured of the various stages of production of a commodity, from the raw material to the finished product; and horizontal combination, or combination of undertakings agreeing on prices or "territories"; its most complete form is the cartel, in which a separate company is formed to market the products of the individual producers—a good example is the Imperial Tobacco

Company (of Great Britain and Ireland), Ltd. In practice, combination has proceeded along both lines together, the resulting organisation often being called a "combine" (though

Great Britain.	Europe.	U.S.A.
1890 : Cotton thread ; Soap, etc. (Lever Bros.).	Germany, 1870s : Chemical Cartels. 1890s : Coal Syndi- cate.	1882 : Standard Oil Trust, followed by Whisky, Tobacco and Sugar Trusts.
1890s : Dynamite Trust.		1890 : Trusts declared illegal.
1904 : Rail-making Cartel.		1901 : U.S. Steel Cor- poration.
1913-28 : Kreuger Match Combine.	Germany, 1904 : Krupp Organisation (Steel).	1900-10 : Enforce- ment of Anti-Trust Legislation.
	1914-18 : FIRST WORLD WAR.	
1934 : British Iron and Steel Federa- tion.	1927 : France—chemi- cal combine. Germany—Develop- ment of Hugo Stinnes and Thys- sen organisations (Steel).	
INTERNATIONAL AGREEMENTS IN RUBBER (Natural and Synthetic), CHEMICALS, STEEL.		
1939-45 : SECOND WORLD WAR.		
1939 : German chemical interests seized by British Alien Property Custodian.		

U.K.—1946 : Fforde Committee on Cement Costs.
Simon Committee on the Distribution of Building
Materials and Components.
1947 : Lloyd Jacob Committee on Resale Price Maintenance.
1948 : Monopolies and Restrictive Practices (Inquiry and
Control) Act : established a MONOPOLIES AND RE-
STRICTIVE PRACTICES COMMISSION.
1956 : Restrictive Trade Practices Act.

CHART 14.—SOME LANDMARKS IN THE HISTORY OF COMBINATIONS,
MONOPOLIES AND RESTRICTIVE PRACTICES.

terminology varies), such devices as amalgamations, inter-
locking directorates, and holding and subsidiary companies
being used ; a holding company is one which holds more than
50 per cent of the shares of the other, or subsidiary, companies.

It was thus that J. & P. Coates, Ltd., by 1890 controlled one-third of the cotton-thread trade of the United Kingdom and attained a virtual monopoly of the world's cotton-thread industry, and that Lever Brothers, the giant soap firm, amalgamated with the Margarine Union, to form Unilever, Ltd., a gigantic concern with 140 subsidiaries, whose activities ranged from fishing, whaling and sealing to the production and sale of candles, jam and cocoa. The Margarine Union was the result of the amalgamation of two Dutch companies controlling the margarine and soap trade of the Continent. The formation of this combine illustrates how the trusts and cartels of the late nineteenth and early twentieth centuries spread across international frontiers.

By 1914 there were international agreements to control the sale of aluminium, electric bulbs, calcium carbide, plate glass, bottles and enamelware. In chemicals three great combinations, Du Pont in the United States, I.C.I. in Great Britain and I.G. Farben in Germany, each with ramifications abroad, were formed; in steel an international steel cartel formed in 1926 was joined by England in 1935. The First World War interrupted these conglomerations of capital, business "acumen" and financial wizardry; but between the two Wars the interweaving of interests went on. In the nineteen-twenties electrical generation and appliances, wood pulp, rayon and non-ferrous metals were the chief industries concerned in the international manipulations of undertakings. "Napoleons" of industry sprang up, as George Hudson had done, to control and direct and build—sometimes too giddily for their ability. Ivar Kreuger, for example, a Swedish "match king", who built up an organisation controlling factories in forty-three countries, producing 80 per cent of the world's matches, outran the limits of his ability and ended as a sordid suicide in a Paris hotel bedroom. Hermann Goering formed in 1939 a Steelworks Union; yet another Napoleon ended his life in circumstances lower than those of his victims, this time by self-administered poison in 1946 in preference to the gallows. One hesitates to estimate the nature and scope of the exploitation to which the ordinary man was subjected

in those days. The Second World War saw the breaking up of many such vast organisations.

In Britain, as we have seen, the troubles in the iron and steel and textile industries were due largely to the British industrialists' reluctance to combine. Nevertheless, though unification in the British iron and steel industry reached nothing like the stage attained in Germany, France, Belgium and the United States, the formation of combines did occur. In 1929 a combine owning steel furnaces, rolling mills and forges was formed by the acquiring of interests in various steel firms by the English Steel Corporation; in 1930 the British (Guest, Keen and Baldwin) Iron and Steel Company was formed, controlling the entire output of heavy steel products in South Wales and Monmouthshire. Among firms producing heavy steel in the North-east, Scotland, Lancashire, South Yorkshire and Lincolnshire there was also some combination. But the attempt in 1933 to set up an Iron and Steel Corporation of Great Britain proved abortive; and a less comprehensive plan was adopted in 1934, with the formation of a British Iron and Steel Federation.

In cotton, the combine movement in the closing years of the nineteenth century was confined to the fine-spinning, sewing-thread and finishing trades. After the First World War two combines were formed in spinning; the sewing-cotton firm of J. & P. Coates had amalgamated with its four rivals in 1895-96.

The subsequent story of the organisation of the British great industries, steel, cotton, coal, has already been told.

Besides combination in large-scale industrial organisation, there took place also the development of trade associations: associations of producers and distributors to regulate the machinery or prices, output and distribution—to this extent adopting the basic feature of cartels—and also to improve production methods, undertake research, exchange information, conduct national advertising campaigns, and appoint representatives to discuss matters of common concern with other associations and with Government departments. They began at the end of the nineteenth century, and the First

World War gave them a great impetus, for the Government needed to establish means by which Government policy could be discussed with representatives of the various industries; at the end of the war they numbered about 500. There was a tendency towards their disintegration in the nineteen-twenties; but the need for combination to counteract import competition in the nineteen-thirties revived them, and the Second World War gave them a new impetus, as the First World War had done. By the middle of the century the number of trade associations had increased to over 2,000.

The weapons of the trade association were resale price maintenance—recalcitrant dealers were put on a "stop list" circulated to producers, who would then refuse supplies; restriction of output; and, so the accusation runs, deliberately keeping quality low, often by buying up and refusing to use inventions which would make for durability in articles of common consumption. Ladderless stockings, everlasting matches, electric lamps of very long life are, it has been claimed, included among such inventions, but it is not clear how much truth there is in such claims.

Corresponding to the restrictive practices of workmen—*e.g.* going slow, the forbidding of overtime by union action, the attempt to enforce employers to employ only union men—there have thus grown up restrictive practices on the part of employing undertakings, which would all appear to be to the detriment of the general public, of whom the employers and workmen form a part.

Nevertheless, in industry generally during the inter-war years those industries which were most criticised for monopolistic and restrictive tendencies were amongst the most successful and progressive: monopoly is not necessarily to the disadvantage of the consumer, a point made in the Coalition Government's White Paper on Employment Policy in 1944.

In 1946 the Ministry of Works initiated two enquiries: the Fforde Committee on Cement Costs, and the Simon Committee on the Distribution of Building Materials and Components. The Fforde Committee on Cement Costs found no evidence of

the restriction of production and the elimination of competition in order to increase prices; but the Simon Committee on the Distribution of Building Materials and Components found that the system of price maintenance and the practice of exclusive trading and loyalty rebates were not in the public interest.

The Monopolies and Restrictive Practices (Inquiry and Control) Act, 1948, established a Monopolies and Restrictive Practices Commission to consider cases referred to it by the Board of Trade; subject to the control of Parliament, the recommendations of the Commission may be implemented by an order of a Minister declaring restrictive practices, either involving agreements to withhold supplies or to give preferences, or relating to conditional sales, to be unlawful.

The Commission lost little time in getting to work. In July, 1951, an Order was made following its recommendation to prohibit certain practices in the distribution of dental goods. Certain practices were disapproved of in its report upon the activities of the Electric Lamp Manufacturers' Association.

The Commission has issued reports on, among other things, dental goods, electric lamps, electric wires and cables, insulin, matches and match-making machinery, imported timber and calico printing. In July, 1955, following a Press report that ten tenders alike to a penny at £57,517 1s. 8d. for steelwork were sent to the London County Council, an inquiry into steelwork prices was begun by the Monopolies Commission.

Only one statutory order (at the time of writing) has been made as a result of the Commission's activities: that concerned with dental goods. In some other cases the trades concerned have adjusted their practices voluntarily so as to conform with the Commission's recommendations.

In 1947 the Government set up a committee to consider resale price maintenance, the practice by which minimum wholesale and retail prices or margins for the resale of goods are fixed by producers. This committee, the Lloyd Jacob Committee, reported in 1949. It estimated that resale price maintenance applied to about 30 per cent of the total amount spent on goods by private consumers; it applied usually to branded goods. The Committee considered the advantages

of resale price maintenance to manufacturers, distributors and consumers. They considered also the collective sanctions imposed by associations on traders, and declared that in their view they were an unreasonable interference with the freedom of distributors. The Committee recommended that the application of collective sanctions should be made illegal, and that the Government should consult with industry to ensure the unimpeded distribution of goods and the protection of the public against measures likely to deprive it of improvements.

The Labour Government of 1951 accepted the Lloyd Jacob Report; and the T.U.C., in February, 1952, called for a ban on the methods used for the collective enforcement of resale prices. The Union of Shop, Distributive and Allied Workers, the principal trade union concerned with distribution, approved of resale price-maintenance practices because they improved the security of employment and standard of living of its members.

The Monopolies and Restrictive Practices Commission issued its twelfth Report in June, 1955.* It aroused considerable public interest, probably because it was the first Report of the Commission dealing with the problem generally and because the Press had been reporting recent instances of the "trying" of recalcitrant traders by private trade association tribunals.

The majority of the Commissioners condemned resale price maintenance agreements, and favoured the legal prohibition of private trade courts. A minority thought that a general legal prohibition would be too inflexible; but there was general acceptance of the view that there should be compulsory registration and publication of the restrictive agreements.

Under the Restrictive Trade Practices Act, 1956, the Government appointed a Registrar of Restrictive Trade Agreements with power to compile a list of illegal trade practices and to take cases before the Restrictive Practices Court.

2. The Rise of Scientific Management

There have been three main problems in the management of undertakings since the Industrial Revolution enlarged the

* Cmd. 9504, H.M.S.O., 3s. 6d. (See p. 182 of this book for fuller details of Report).

scope and scale of industry, and raised new industrial classes: the efficient organisation and management of large-scale organisations; the concentration of industry generally to assist in this efficient organisation and management on a national scale; and the harmonious and fruitful conduct of relations between employers and employed. The term "scientific management" has been variously applied to activity related to all three problems, though mainly used in relation to the first; it often includes the third, which is customarily treated as a special branch of managerial activity of its own and called "personnel management".

The story has been told of the broad development of unplanned and unco-ordinated industry in this country. The individualism practised in the cotton industry, the breeding of an excessive number of units in the coal industry, and the circumstances which forced some measure of combination and co-ordination in the British basic industries have been described. Of the entry of the State into the industrial field as supreme manager and co-ordinator, something will be said in the next Section. It is our present task to examine the development of "scientific management" as the movement has affected the organisation of individual business concerns and the conduct of relations between employers and employed—the two aspects form part of one whole, since a business undertaking cannot be wholly efficient without tolerable management-employee relations.

It has already been shown that "scientific management" had already been practised long before the modern developments of the idea. Robert Owen had demonstrated how to make a profit while conducting business on humane and enlightened lines, somewhat to the disgust of his fellow-manufacturers, over a hundred years before the twentieth-century application in England of the ideas of the modern apostle of "scientific management", F. W. Taylor. The early application of such ideas was, indeed, more concerned with efficiency of technical operation than with the conception of a business undertaking as a necessary means of economic production, not of value for its own sake as one of the Absolutes, but a machine

involving the efforts of men and women whose welfare is of importance in the life of the community as a whole.

A Cambridge professor of mathematics, Charles Babbage, who was visiting factories in England and on the Continent in connection with his invention, a calculating machine, was led to study management and "those principles of generalisation to which my pursuits had naturally given rise"; and he published his treatise, *On the Economy of Machinery and Manufactures* in 1832. But it was not until the eighteen-eighties that the "scientific management" movement was really begun by a group of American engineers in the United States. The outstanding figure in the movement was F. W. Taylor (1856-1915), an engineer and inventor, who expounded his views in his *Principles of Scientific Management* and *Shop Management* in the early nineteen-hundreds. Taylor's ideas began to be applied in 1910, when the railroads, while seeking to justify an increase in rates, showed how costs could be reduced by the application of Taylor's ideas, and thus publicised them.

In essentials, Taylor's body of ideas consists of the planning of work in advance; selecting the best men for particular jobs; determining standard times for the performance of given pieces of work; standardising tools and equipment; the elimination of unnecessary movements; adequate cost accounting; and wages payment on a bonus system.

The workers, faced with efficiency "drives", suspected exploitation; and certainly the "stop-watch" methods, which were pioneered in time-and-motion study by men like F. W. Taylor and F. B. Gilbreth, were often undertaken by their followers with more enthusiasm than humanity. Taylor's quality of mind may be gauged by the fact that in high-speed steel research he conducted 40,000 experiments: a notable achievement in scientific method but indicative of a type of mind which may not prove too happy in human relations. Frank Bunker Gilbreth (1868-1924) pursued his search of the "one best way to do work" with more humour and with more understanding than Taylor of the fact that man does not live for work alone. The third member of a trio

often regarded as the founders of "scientific management" was H. L. Gantt (1861-1919), who evolved a number of charts: his graphical representations were designed to assist the planning of production.

In France French engineers like Charles de Freminville and H. le Chatelier took up Taylor's ideas; and contemporary with F. W. Taylor, Henri Fayol (1841-1925) was also pursuing the subject. Fayol, a mining engineer, analysed business operations into six groups: technical, commercial, financial, security, accounting and administrative; he emphasised the value of training for management.

In America Mary Parker Follett (1865-1933), a political scientist and philosopher, supplied the philosophical and humanist background in business organisation so lacking in the work of the engineers. She was much concerned with the conflicts that arise in the conduct of industry. She paid a visit to England in 1926, came again in 1928 and continued to live in England until her death. Her *Creative Experience* was published in 1924.

The doctrines of "scientific management", as expounded by the Americans, spread more slowly in England than they did in the United States. The resources of a powerful mind allied to a warm humanity were brought to the consideration of the problems of industrial organisation, especially as they affected human relations in industry, by B. Seebohm Rowntree (1871-1954), who directed the Industrial Welfare Department established at the Ministry of Munitions during the First World War; from this Department sprang the Industrial Welfare Society. The cocoa works at York, of which Rowntree is a director, became well known as a model organisation. No narrow "captain of industry", Rowntree interested himself in social problems, particularly those related to poverty and unemployment; and it is in this field that he is even better known to the social student.

The enthusiasm with which ideas relating to "scientific management" have been taken up in recent years by many industrialists both in the United States and in this country has given rise to much writing on the subject of business

organisation (much of it, unfortunately, marred by verbosity and irritating business jargon). The rôle of the manager in industry has indeed been elevated by some writers nearly to that of the ruling class depicted in Aldous Huxley's *Brave New World*, a savagely satirical comment on the possible direction of human progress. An American philosopher, James Burnham, wrote a book, *The Managerial Revolution*, first published in the U.S.A. in 1941 and in England in 1942,* putting forward the thesis that the control of the world was passing into the hands of the managers. The failure of the capitalist system to work would result not in socialism, but in the rule of administrators.

Certainly the tendency of modern industrial and government organisation is to demand a high degree of ability, technical qualifications and training in its administrators. The Administrative Staff College at Henley-on-Thames, supported by funds from business firms and individual persons, was founded in 1946, and provides courses in the principles and techniques of organisation and administration. The public corporations are developing their own schemes of training. But technical ability and training does not bring with it competence in government; statesmanship demands more than administration.

Among the various aspects of the managerial revolution which have come into prominence in recent years, production control has received recognition as a valuable tool of business organisation. It is the lineal descendant of the older "efficiency" methods; it is a system whereby it is intended to achieve a smooth, co-ordinated flow of work within a factory so that, by planning and control of all the productive operations in the stages of manufacture of an article, the final product is completed in accordance with the plans laid down.

The twentieth century has seen considerable advances in industrial psychology. On the foundation of what has been solidly established in psychology, as opposed to fads and misrepresentations of the imperfectly understood research of original thinkers like Freud, the industrial psychologist

* Penguin Books, 1945.

investigates such matters as the training and selection of workers, incentives, the posture and movements of workers, their material environmental conditions, such as lighting, heating and ventilation, and the psychological relations between labour and management. In Britain the National Institute of Industrial Psychology was formed in 1919 as a non-profit-making body for promoting the study of the "human aspects" of business.

Arising out of these investigations, and receiving an impetus from the outbreak of war in 1939, came the modern developments in personnel management. The need for an exceptional production effort impelled Mr. Ernest Bevin, the Minister of Labour, to introduce in 1940 the Factories Medical and Welfare Order. His successor, Mr. George Isaacs, associated himself with the work of the Industrial Welfare Society; and Sir Stafford Cripps, when Minister of Aircraft Production, established personnel departments in the factories he controlled.

Many undertakings found that the addition of personnel departments was of such value that they retained them as a permanent part of their organisation; and personnel officers, or personnel managers, or welfare officers, to-day perform such functions as the keeping of employee records; recruitment and employment; the provision of welfare services; the supervision of health and safety measures, where these are not adequately served by special officers; the conduct of joint consultation relations; and the supervision of the education and training of young employees.

Another modern development has been Training Within Industry, a Government-initiated scheme whereby foremen, supervisors and executives learn the best way to perform the training duties with which they are entrusted as part of their functions.

The broader aspects of management training were considered in a report of a special committee appointed by the Minister of Education in 1945. The Committee consisted of representatives of professional bodies concerned with the part-time study of management in technical and commercial colleges, to

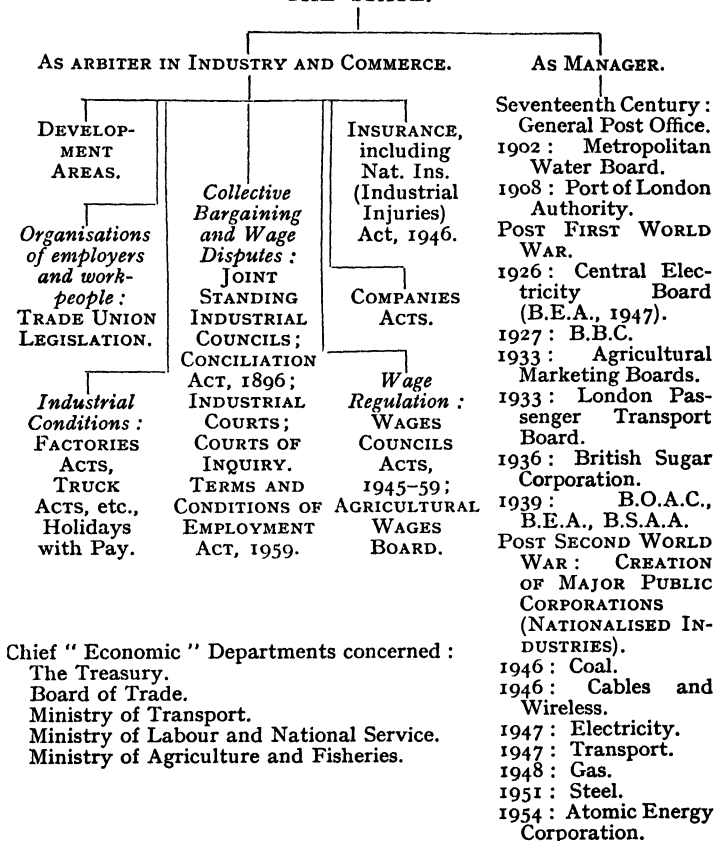
consider whether action could be taken to co-ordinate their requirements. The Committee's Report, *Education for Management*, was published in 1947; it contained proposals for courses of study in management subjects. The subsequent formation of the British Institute of Management in 1947 was a further step in the co-ordination of management study; the Institute of Industrial Administration, with which the British Institute of Management was integrated in 1957, had been founded in 1920.

3. The State as Manager

The story of the evolution of industrial organisation, as we have followed it, has shown an increasing participation by the State in the organisation of industry as a whole, particularly on the part of such "economic" departments as the Board of Trade, the Ministry of Transport, the Ministry of Agriculture and Fisheries, the Ministry of Supply, and the Ministry of Labour and National Service. In industrial conditions; through such legislation as Factories Acts and Truck Acts; in industrial relations through the negotiating machinery set up; in wage regulation; in social insurance, such as the National Insurance (Industrial Injuries) Act, 1946, superseding the Workmen's Compensation Acts; in all these the State has directly concerned itself with the organisation and direction of industry. The Board of Trade has been actively associated with the Working Party Reports which have reviewed the practical conditions of industry; and the nationalised industries are represented on the British Productivity Council, the successor to the United Kingdom section of the Anglo-American Productivity Council, which has published numerous reports relating to the investigations of productivity teams and specialist teams in production methods in British industries.

But the State has done more than that. It has itself adopted the rôle of manager. In the seventeenth century it had established a General Post Office, and in the course of 300 years this Government machine has developed into a

THE STATE.



Chief "Economic" Departments concerned :
 The Treasury.
 Board of Trade.
 Ministry of Transport.
 Ministry of Labour and National Service.
 Ministry of Agriculture and Fisheries.

CHART 15.—THE STATE IN ITS RELATION TO MODERN INDUSTRIAL ORGANISATION.

huge technical and commercial concern. In recent years the Port of London Authority was empowered under an Act of 1908 to control the docks and shipping of the Thames.

Early experiments in public control were conducted by municipal authorities rather than by the State; but in the inter-war years the Central Government began to operate public undertakings which were of such a nature as to involve the public interests intimately and on a large scale. Here came about the true managerial revolution: a revolution in which a new tool was being formed in the administration of public affairs. This tool is the public corporation: it is a new conception in the story of the evolution of industrial organisation, and it is still in process of being fashioned; as yet, no satisfactory means has been discovered of controlling the new autonomous monopolies by parliamentary action.

In 1926 the Central Electricity Board was established to promote and control the bulk generation of electricity and the distribution lines, functions formerly carried out by a number of independent units. In 1948 the electricity industry, comprising 541 supply undertakings, 60 per cent of which were publicly owned, passed under the control of the British Electricity Authority by an Act of 1947. The British Electricity Authority became responsible to the Minister of Fuel and Power for the generation of electric current and its distribution to fourteen Area Boards. The British Electricity Authority was re-named the Central Electricity Authority in 1955.

Following the Herbert Committee Report, 1956,* the Central Electricity Authority was dissolved in 1958 and its assets and executive functions concerned with the generation and bulk transmission of electricity were taken over by a Central Electricity Generating Board.

The establishment of the British Broadcasting Corporation in 1927 and the experiment of the Agricultural Marketing Boards, out of the direct line of the formation of corporations, have already been mentioned. In 1933 a significant chapter

* *Report of the Committee of Enquiry into the Electricity Supply Industry*, January, 1956. Cmd. 9672 (H.M.S.O., 6s 6d. net).

came with the creation of the London Passenger Transport Board, the board, the responsibility of Appointing Trustees, comprising people of wide experience in financial, transport, industrial or commercial matters—a method of appointment designed to avoid the risk of political interference.

The British Sugar Corporation was established in 1936; it was formed by the amalgamation of the existing fifteen sugar-beet companies. Then, in 1939, came the British Overseas Airways Corporation; the subsequent establishment of British European Airways and British South American Airways has already been mentioned.

In the twelve years before the Second World War four major public corporations were established. After the war the process of the creation of these corporations to control vast sections of the nation's industrial organisation was continued and accelerated. The Bank of England was nationalised in 1946—though, as has been explained, the Bank was virtually a nationalised body already. It was in 1946 that a major industry was brought under Government control and ownership by the Coal Industry Nationalisation Act of 1946. The Cable and Wireless Act of the same year transferred all shares in Cable and Wireless, Ltd., to Treasury nominees, though the company remained in existence and operated under the Companies Act; the Act provided for the transfer of the assets to the Post Office by 1949: a process of gradual nationalisation. The Gas Act, 1948, nationalised the gas industry.

Cotton control and bulk buying became a fruitful field for controversy; controversy was less vehement in the nationalisation of transport by the Transport Act, 1947; but the nationalisation of steel in 1951 provoked hot arguments, often founded more on political ideologies than on sincere opinion regarding the best methods of developing the nation's steel resources.

In colonial development, too, the State was acting, setting up funds for colonial development; in a grandiose ground-nut scheme of 1947–49, in Tanganyika, colonial development was pursued with more enthusiasm for the spending of public

money than with care in the application of the principles of sound management. Under the Overseas Resources Development Act, 1948, the Colonial Development Corporation was established with power to spend large sums of money on the development of the Colonies.

The setting up of an Atomic Energy Corporation (the United Kingdom Atomic Energy Authority) is the latest development in the story of the organisation of industrial resources under the authority of the State through the medium of a public corporation.

CHAPTER XI

CONCLUSION

IT is part of the fascination of the study of history that the story one reads is continued into one's own life and that one is part of the events that will shape the lines of the future. As has been stressed in this work, it is difficult to obtain a proper perspective of the course of events near to one's own day; and this is especially true of the specialist; to the cobbler there's nothing like leather, and to the industrialist the fact of industry seems to be the most important fact in the picture of his own times.

Yet one may ask whether the evolution of modern industrial organisation is in many aspects the evolution of new ways by which men and women may make themselves unhappy. This is an age in which economics is one of the principal pre-occupations of mankind. But economics is an extremely limited and partial social science; and it may even be disputed whether it is worthy of the description of science to the extent that physics and the other exact sciences are science. Only in so far as "science" is conceived to be scientific method, a means of discovering relationships between facts, can economics be regarded as a science.

Certainly a "science of living" is of far greater magnitude and complexity than the mere study of the ways in which communities make use of their material and mental resources, in so far as these ways can be expressed in money prices, which is all that economics is, as a "science".

Many more people have suffered in many more different ways in the course of the evolution of modern industrial organisation than might have been believed possible by a student of industrial affairs watching the developments of the nineteenth century and expecting that an era of material

prosperity for everybody would follow the promise of Man's greater control over his material environment as invention followed invention, as transport and communications spread, as a greater understanding of the possibilities of currency and banking problems came to men. There followed the era of dark, satanic mills, of population overflowing our tight little island, of conflicts between "capital" and "labour" the story of which is not yet done.

In our own day we see in our own country the struggling of groups for economic power, the demands of industrial workers for a greater share of the product of industry, the grinding out of the lower middle and professional classes striving to preserve a standard of economic independence in the face of an ever-increasing burden laid on them by a State in which economic and political functions are inextricably intermingled.

"Social classes" to-day refer, as they have done for some time, not primarily to incomes, but to cultural levels; the term "standard of living" has come to mean much more than mere consumption of food and entertainment services, but has reference also to the dignity of maintaining one's own house; to providing education for one's children (in spite of the 1944 Education Act); to the employment of one's leisure, whether in the pursuit of organised sport or of the graces of life in music, art and literature.

Modern industrial organisation has made possible for many more people the opportunity of enjoying a higher "standard of living" in this sense; and it is precisely this which is, or should be, the *raison d'être* of any industrial organisation at all. Man does not live by bread alone; a factory is a tool for better living, as, indeed, is the State itself, for government is not an absolute Good, an end in itself, but a means to an end.

Such observations as these would be irrelevant in this work, or at least superfluous, if there were not a danger that industrialists, and many other people, come near very often to forgetting the theme to which they relate. Social conditions, the physical and mental quality of the people, the part which the State is allowed to play in the organisation of community

life, all are very real influences in the evolution of modern industrial organisation. Conversely, the development of industry itself; the progress of industrial relations; the operation or otherwise of the private profit motive; all have a considerable influence upon the social structure of a community. Such problems as the interaction of atomic energy for industrial purposes, and of the prospect of tremendously increased sources of power, upon the tendency of both employers and employed to indulge in restrictive practices to suit their own personal ends will have to be faced; and the solving of this problem alone will tax to the uttermost the capacity of men and women to adapt themselves to changed circumstances.

It is related of Henry Ford that a famous remark of his was to the effect that: "History is bunk." If it should prove that men generally have learned nothing from the procession of events which have been described in this work, that waste of human resources and effort through deficiency in organisation, conflicts, self-seeking and limited vision shall continue, then indeed it may be feared that Ford's criticism will be justified.

Mary Parker Follett, one of the pioneers in the theory of industrial administration and "scientific management", said that conflict arises not from the differences between individuals but from the failure of individuals to make their differences contribute to the common cause. In our island there are differences enough, differences not merely between "classes" and between "capital" and "labour", but between the very temperament and character of the various types of people making up the "British" people. One can think at once of, for example, the hard-headed practicality of the Northern people, the softer geniality of the West Country folk, the caution but essential kindliness of Norfolk men and women. The "British" are a united nation only in so far as they have learned to integrate their differences.

The changes that are taking place around us call for an effort on the part of every man and woman to study the trend of industrial affairs in order that he may play a part, however humble, in helping to integrate the differences between

individuals and groups that must inevitably arise or become accentuated as more complex industrial forms are evolved—forms that, as we have seen in our study of combines and monopolies, reach out far beyond the nation's shores. The contribution which the ordinary man can make to his industrial civilisation can be made clear to him only by his study and appraisal of the events which have gone to make up what has been called in this work the evolution of modern industrial organisation. In his estimate of the significance of certain events he may make mistakes. But those very mistakes, if recognised and subsequently pondered over, help to free the thinking person from the danger of acquiring an academic sterility of mind, preoccupied mainly with the fear that it may in some small matter be proved wrong.

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TEST PAPER

(I.I.A. = Institute of Industrial Administration External Paper.)
(The Institute of Industrial Administration is now the British Institute of Management.)

1. Give an account of the organisation of medieval industry in this country. Point out the merits and defects of this organisation. (I.I.A., January, 1954.)

2. "The differences between the medieval guilds and the modern trade unions have been greatly exaggerated." Do you agree?

3. Give a short account of the main features of the planned economy of the Elizabethan state. Point out any similarities to our modern planned economy. (I.I.A., January, 1953.)

4. Describe the part played by the great chartered companies in building our overseas trade in the seventeenth and eighteenth centuries. (I.I.A., January, 1953.)

5. What were the characteristic economic practices of the period we call the Mercantilist Age? (I.I.A., June, 1953.)

6. Consider the view that the "Industrial Revolution" was not a sudden event but an inevitable phase in the economic and social development of the Western World.

7. Give reasons for the rapid development of industry in this country between 1760 and 1820. (I.I.A., January, 1953.)

8. "Coal was the basis of the Mechanical Revolution." Discuss.

9. Have the effects of the "revolution" in agriculture been comparable with the results of the "revolution" in industry?

10. The latter half of the nineteenth century has sometimes been described as "the second industrial revolution". Indicate the nature of the changes which justify this description. (I.I.A., June, 1953.)

11. Describe the development of road transport in this country since 1880. Indicate the effect of these developments upon the location of industry. (I.I.A., January, 1954.)

12. "Nationalisation of the railways was the inevitable end to a process in Britain always reluctantly undertaken by the State." Explain and discuss.

13. "The limited liability company has been of equal importance with the machine tool in the development of modern industrial organisation." Consider this view.

14. Would it be justifiable to describe the rise of the Co-operative System in this country as "an answer to private capitalism"?

15. Compare the organisation of banking in this country in 1825 with its organisation to-day. To what extent were state intervention and normal economic influences responsible for the changes which have occurred? (I.I.A., January, 1954.)

16. Why did Britain return to the policy of Protection in the twentieth century? (I.I.A., June, 1953.)

17. Compare the population problem in England as it appeared to Thomas Malthus in 1800 with the population problem of to-day. (I.I.A., January, 1954.)

18. "The rise of the Factory System meant the inevitable abandonment of *laissez-faire*." Explain and discuss.

19. Mary Parker Follett held that conflict is not the expression of differences in individuals but of the failure of individuals to make their differences contribute to the common cause.

Consider whether the background of events leading to the Trades Disputes and Trade Unions Act of 1927, and to its repeal in 1946, indicates that this view is adequate in this case.

20. Give a critical account of the methods used by the State in the twentieth century for the purpose of regulating wages. (I.I.A., January, 1954.)

21. Give a brief account of the ways in which the State in this country has exercised an increasing control over industrial conditions since 1900. (I.I.A., January, 1954.)

22. "The application of scientific method to management itself was a natural consequence of its application to agricultural and industrial techniques." Discuss.

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