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THE GROWTH OF ENGLISH SOCIETY

BOOK II

BY E. LIPSON

THE ECONOMIC HISTORY OF ENGLAND
VOL. I. THE MIDDLE AGES. Tenth Edition
VOLS. II & III. THE AGE OF MERCANTILISM. Fifth Edition

THE HISTORY OF THE
WOOLLEN AND WORSTED INDUSTRIES

EUROPE IN THE XIXTH CENTURY*
1815-1914
Eighth Edition

EUROPE 1914-1939*
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A PLANNED ECONOMY OR FREE ENTERPRISE
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THE GROWTH OF ENGLISH SOCIETY
A SHORT ECONOMIC HISTORY
(Also published in New York by Henry Holt and Company)

ADAM AND CHARLES BLACK: LONDON

THE GROWTH OF ENGLISH SOCIETY

A Short Economic History

BY

E. LIPSON

BOOK II

The Age of Machinery

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THE AGE OF MACHINERY

Chapter Seven

'THE INDUSTRIAL REVOLUTION'

The romance of industry has its heroes no less than wars or voyages of exploration or empire-building. Men of inventive talent, thrilled by the great mechanical discoveries of a stirring age, were attracted into a field where glittering prizes dazzled the imagination. The spirit of adventure which had inspired the Elizabethan seamen in the sixteenth century now found expression in the longing to wrest from nature her coveted and closely-guarded secrets. The inventors opened a vital chapter in our island story, of which the pages are inscribed with a galaxy of momentous achievements: but their importance is not confined to England. Among the great events that have shaped the destiny of mankind, a distinctive place will always be assigned to the series of inventions which have subjected natural forces to the service of man. The historian sees in these inventions the climax of centuries of economic development. The economist is concerned with their effects which are writ large over the whole face of modern society. The inventions substituted for human energy the machine working under human guidance; and they have produced far-reaching consequences of which it is the purpose here to attempt some estimate.

It is tempting to dramatize great events; we picture them as thunderbolts emerging out of a clear blue sky; our minds are impressed by their apparent unexpectedness. Yet to the historian this attitude is profoundly untrue to historical realities. Where the popular imagination visualizes a swift transformation of the social or political landscape, the historian is conscious of a process of gradual change in which the old is blended almost imperceptibly with the new. Hence to view the 'Industrial Revolution' in its proper perspective, we must first discard the current clichés that

embody the traditional idea of the inventions and serve to distort their real significance.

According to the common belief the inventions constitute the starting-point of the present industrial society. They are generally regarded as the beginning of modern economic life, just as the French Revolution is regarded as the beginning of modern political life. The popular interpretation of the 'Industrial Revolution' traces to the introduction of machinery all the phenomena that we consider most characteristic of the nineteenth and twentieth centuries. Capitalism, factories, large-scale production, oversea markets, trusts, credit instruments, the alternation of booms and slumps, the proletariat and trade unions—these are supposed to have come into existence with the adoption of power-driven machinery not very much more than a hundred years ago. The state of England before the era of the inventions is painted in the stereotyped descriptions as that of a primitive regime in which there was no cleavage between capitalist employers and proletarian wage-earners, no world-wide commerce, no unemployment. Beyond the 'Industrial Revolution' the historians depicted centuries of slow and imperceptible growth during which the face of England remained almost unchanged. A static society slumbered in blissful unconsciousness of the dynamic forces which the invention of the steam engine was destined to let loose upon it. A fanciful picture, which has long passed for authentic history, of a backward community suddenly convulsed by uncontrollable economic impulses and upon which there descended a whirlwind of inventions bringing in their train the capitalist system, the factory system, the wage system, exploitation of labour and social strife.

Nothing more remote from historical truth can well be imagined than the prevailing misconception that the inventions of the late eighteenth century involved a violent breach with the past and effected an abrupt revolution in the tenor and rhythm of the national life. There is a wealth of material, as the foregoing chapters have abundantly shown, to demon-

strate that England long before the inventions had a vigorous manufacturing and mercantile life of her own—in which striking resemblances to the modern pattern may be fairly set against the social dissimilarities born of the factory system. Much that is reputed novel in our present society is in reality deep-rooted. The older structure had already evolved many of the capitalist traits associated with the world of to-day; so that, when the invention of machinery ushered in a fresh epoch, it found a country prepared for its reception—where the entrepreneur was recognized as the mainspring of the economic mechanism and where belief in freedom of enterprise had crystallized into a dogma. In short it was in a nation organized on a capitalist basis that the inventions were brought to light. They were not the product of a primitive people absorbed in rural pursuits, but the mature achievement of an advanced community where industry and commerce had become a fruitful source of wealth. If we destroy the legend that the inventions suddenly revolutionized English society and gave birth to a new industrial order, we can at least put in its place a more rational interpretation in which the mechanical changes appear as a natural development in line with the course of historical evolution—the climax of centuries of steady growth.

The question has often been asked why the 'Industrial Revolution' came first to England. The explanation is commonly found in the expansion of her oversea trade with a far-flung commercial empire in America, India and Africa, which together with the Continent of Europe supplied markets for her manufactures. Admittedly the existence of markets abroad provided an incentive for the adoption of inventions: during the first half of the eighteenth century the value of exports from England increased 100 per cent. and the rate of progress continued to be rapid. However it is only a part of the explanation, since France also made notable commercial strides in the eighteenth century but

was outstripped in the race for industrial supremacy. Nor would it be correct to infer that the French people were lacking in inventive talent: on the contrary, at one period they led the way in many of the industrial arts. We must take other essential factors into account.

In the first place, prior to the inventions English industry, commerce and banking were constituted on lines which served to make a large outlay on machinery and buildings a practicable as well as a profitable venture; nor could manufacturers have utilized the inventions if England had not accumulated sufficient capital for investment in productive enterprises. In the second place, there existed a class of entrepreneurs equipped with the requisite technical qualities and organizing abilities—and accustomed to large-scale production, the handling of labour forces, the utilization of credit instruments, the dependence on imported materials and the requirements of distant and varied markets. They were no less accustomed to latitude in the conduct of their business and infused with the spirit of enterprise, to which Dean Tucker bore testimony when he declared (1757) that 'almost every master manufacturer hath a new invention of his own and is daily improving on those of others.' In the third place, the growth of population in the hundred years following the Restoration failed to keep pace with the expansion of commerce and industry. The shortage of hands in the textile manufactures, combined with the comparatively high standard of wages, furnished English producers with an inducement to avail themselves of mechanical methods which would economize in the use of labour—a similar motive was not present in the same degree on the Continent. They had further incentives for the introduction of machinery in the shortcomings of the old hand-yarn products because manual spinning had many defects,[1] and in the rise of trade unionism which strengthened the desire

[1] The spinner often lacked skill and produced yarn which was neither uniform in quality nor firm enough to stand the strain of the loom; as a result the cloth was uneven in texture. The supply was also irregular.

of employers to be liberated from their dependence upon labour.

In the fourth place, the home market catered for a prosperous society where property was widely diffused, and whose standard of comfort was substantial without being luxurious. Side by side with a widespread middle class which consisted of manufacturers, traders and farmers, there ranged the better-paid sections of artisans and peasants. Voltaire on his visit to our country in the early eighteenth century was struck by the fact that 'the feet of the peasants are not bruised by wooden shoes; they eat white bread, are well-clothed;' and he could have added that they were learning to drink tea. Hume, who considered that 'a too great disproportion [of wealth] among the citizens weakens any state,' drew attention to 'the great advantage of England above any nation' in this respect, and he spoke of the 'riches' of her artisans. Unlike France the fabric of English society was composed of numerous layers which bridged the gulf between rich and poor, and made it relatively easy to move up in the social scale into a higher grade. A writer in 1767 remarked that 'in England the several ranks of men slide into each other almost imperceptibly; and a spirit of equality runs through every part of the constitution. Hence arises a strong emulation in all the several stations and conditions to vie with each other; and a perpetual restless ambition in each of the inferior ranks to raise themselves to the level of those immediately above them. In such a state as this fashion must have an uncontrolled sway. And a fashionable luxury must spread through it like a contagion,' since 'our luxury keeps full pace with our opulence.' This eighteenth-century picture of a fluid and progressive society throws a strong reflected light upon the conditions which were current in earlier times. The ability to rise from lowly beginnings is seen in the careers of two seventeenth-century entrepreneurs —Sir Ambrose Crowley the greatest ironmaster of the Stuart age who started life as a working blacksmith, and Peter Blundell one of its greatest clothiers who also sprang from

the ranks. The strength of the movement to overcome class barriers is attested by the complaints that servants aped their superiors in luxury in dress, which put 'all degrees and orders of woman-kind into disorder and confusion,' while the master could not be known from his man except that the latter 'wears better clothes.' The more even distribution of wealth in England, as compared with the Continent, reacted upon the sphere of production. The nature of the market determines the nature of the productive processes, and the prevailing demand of the English people was for commodities which were sound and useful rather than flimsy and artistic. Such commodities could be manufactured by machinery without the loss of their essential qualities. Not only did the character of English wares lend itself to *machine* production, but the flexible trend of national consumption was responsive to *mass* production in a country where the population was increasing, wages were advancing and wants were elastic. The history of the United States demonstrates how a rapidly growing nation with a rising standard of life affords encouragement for the diffusion of new industrial methods and techniques.

In the fifth place, the early exploitation of the coal measures stimulated the progress of industry, for coal served as the fuel of numerous manufactures and as the driving-force of machinery. In the sixth place, all the varied influences (enumerated above[1]) which contributed to England's economic growth played their part in paving the way for the achievements of the factory age. To sum up—the 'Industrial Revolution' came first to England because she had expanding markets at home as well as abroad for her wares; because the nature of these wares was suitable for machine production; because the shortage, frequent inefficiency, relatively high price and organized power of labour supplied a motive to employ mechanical contrivances; because the necessary resources were available for investment; because there existed men of enterprise with the

[1] See Chapter Six.

energy to exploit novel methods; because it lay in the logic of centuries of development as moulded by a variety of contributory influences.

When does the age of the inventions commence? The decades with which the 'Industrial Revolution' is traditionally associated cover the period 1760 to 1830: but these dates are misleading. The events which are designated as the 'Industrial Revolution' constituted no sudden breach with the existing economic order but were part of a continuous movement which had already made marked advance. The famous inventions inseparably linked with the names of Arkwright, Watt, Stephenson and many others, were the climax of a long series of industrial experiments extending over two centuries. One important discovery, the knitting frame of William Lee for manufacturing stockings, showed that inventive genius was not altogether lacking even in the sixteenth century; and if, with this conspicuous exception, the earlier ages were barren of great technical achievements it was not due to want of ideas or energy. The eager search for improvements—reflected in an astonishing list of industrial patents—led Miege (1691) to claim that 'no nation has been more industrious than the English in mechanic arts, and the world to this day is obliged to them for many of their useful inventions and discoveries.' And Cary (1695) depicted a community in which 'new projections are every day set on foot, all which save the labour of many hands.' Nevertheless success in vital things eluded the grasp of the seventeenth century; and there was left as Fuller (a contemporary historian) observed: 'A new world of experiments to the discovery of posterity.'

Two impediments in particular retarded progress in the invention of machinery. Firstly: the fact that the initial stages are necessarily the slowest and most arduous. The idea of an invention may be grasped yet decades may elapse before it can be made to work. Lack of technical knowledge caused wealth laboriously accumulated to be dissipated in fruitless

enterprises, where experience was painfully and dearly bought—though without them the discoveries of a later age would have been impossible. Secondly: the hostility displayed by the workers to labour-saving devices was a discouragement to inventive talent. Their aversion sprang from an inherited dislike of innovations, coupled with the fear that they would lose their means of livelihood. From the thirteenth century the introduction of machinery was a fruitful source of dissension, and the government frowned upon the 'abridgment' of labour in order to avoid social unrest. To disarm the popular opposition writers were at pains to correct what they called 'the mistaken notions of the infatuated populace who—not being able to see farther than the first link of the chain—consider all such inventions as taking the bread out of their mouths, and therefore never fail to break out into riots and insurrections whenever such things are proposed.' Accordingly the apologists for machinery were learning to use the familiar argument that cheapness stimulates the demand for commodities which in turn stimulates the demand for labour. Thus the poet Dyer, speaking of Paul's invention of spinning by rollers, bade the women spinners not to lose heart:

> 'Nor hence, ye nymphs, let anger cloud your brows;
> The more is wrought, the more is still requir'd.'

It was as a result of the persistent efforts of innumerable pioneers that a generation before the accession of George III —the customary date assigned for the commencement of the 'Industrial Revolution'—there had already dawned the 'new world' confidently predicted in the previous century. Its golden promise was foreshadowed in a galaxy of outstanding achievements. In the first decade of the eighteenth century Abraham Darby smelted iron ore with coke; in the second decade Newcomen invented the steam engine to drain water from the mines; in the fourth decade Kay invented the fly-shuttle in weaving, and Paul invented spinning by rollers which Arkwright later developed; in the fifth

decade Paul invented a carding machine for preparing wool, and Huntsman produced steel by what is known as the crucible process. It is not surprising then to find this picture of the industrial state of England in the middle of the eighteenth century drawn by Dean Tucker: 'Few countries are equal, perhaps none excel the English in the numbers and contrivance of their machines to abridge labour. In regard to mines and metals of all sorts the English are uncommonly dexterous in their contrivance of the mechanic powers. At Birmingham, Wolverhampton, Sheffield and other manufacturing places almost every master manufacturer hath a new invention of his own and is daily improving on those of others.' Thus in spite of obstacles economic society had not remained stagnant. It was continuously evolving, and the stage was being set for the coming of the factory age with its concomitants of power-driven machinery, mass production and the assemblage of workers under one roof.

The series of inventions, comprehended in the term 'Industrial Revolution,' took place in the textile and iron industries; they were accompanied by notable improvements in the system of internal and external transport as well as by an immense expansion of other branches of the national economy, especially coal-mining and engineering. We begin with the textile industries.

To understand the inventions which revolutionized the manufacture of textiles, it is necessary to grasp the nature of the main technical processes involved in the production of cloth. First of all the different qualities of wool in a fleece were sorted and cleansed from impurities. Then in the woollen industry the wool was carded (brushed) in order to disentangle the locks and straighten out and interlace the fibres. In the worsted industry the wool was combed instead of carded, the fibres were laid parallel with each other, and the long wool (the 'top') was separated from the wool of shorter staple (the 'noil'). The wool was now ready for spinning, in which either a distaff and spindle or a spinning

wheel—the latter was known in this country at least as early as the fourteenth century—was employed to draw out and twist the fibres so as to form a continuous thread. The wool was converted into a thick coarse thread called roving, and the rovings were spun into a fine twisted thread termed yarn. Next came weaving. A piece of cloth is made up of longitudinal threads (the 'warp') intersected by transverse threads (the 'weft'). The process of weaving consists in inserting the threads of the weft between the alternate threads of the warp by casting a shuttle. When the cloth was woven it was fulled (in the woollen industry only), that is, thickened and felted, after which it was 'dressed' or finished—thus imparting a very smooth appearance to the surface.

Machinery had existed from early times in one of these processes, namely, in fulling. In the thirteenth century water-mills were used to thicken cloth, and they afford the first known example of the application of a motive force to the textile industries. All the other processes, carding, combing, spinning, weaving and finishing, were performed by hand. The era of the inventions was ushered in by John Kay, who was born in 1704 in Lancashire. In 1733 he patented the fly-shuttle[1] whose main feature was a new mode of casting the shuttle. By means of a lever, or 'picking peg,' it was driven to and fro across the warp mechanically without being thrown by the weaver's hand. The speed at which the shuttle could now travel gained for the contrivance the name of fly-shuttle. Robert Kay, a son of John Kay, afterwards invented the drop box which enabled the weaver to use a variety of shuttles, each containing a different coloured weft. The invention of the fly-shuttle permitted a weaver to dispense with assistance in weaving broadcloth: he ceased to be dependent on a journeyman whose irregular habits arising

[1] When Kay's fly-shuttle was introduced into the north of Ireland, the new process of weaving attracted large crowds and one woman 'was enthusiastic in her admiration of it. Clapping her hands, she exclaimed in Scoto-Hibernic phraseology: "Weel, weel! The warks o' God's wondtherful, but the contrivance o' man bates Him at last!" '

from idleness, intemperance or sickness, had often hindered his work. It also proved beneficial to the weaver's health; he was able to sit upright instead of having to lean forward, and was therefore less subject to breast disorders. Yet the work was apparently more strenuous, and the common or double-handed loom still had its advantages for older weavers.

Kay's ill-fated career is a melancholy illustration of the evil destiny which has pursued many of the English inventors: their lives have frequently been a series of disappointments, sometimes relieved by transitory gleams of success but more often shrouded in obscurity and gloom. The weavers of Colchester, where Kay lived, resisted the introduction of the fly-shuttle in the belief that innovations in the method of weaving would take from them their means of livelihood. Their opposition drove Kay to the north of England, and he settled in Leeds. Here he found himself in conflict with the West Riding clothiers, who adopted his invention yet refused to pay for it. Failing to maintain his invention against infringement—and his life threatened by a mob 'determining to hinder the wheel shuttles progress by killing of Mr. John Kay'—he retired to France where the French government awarded him a pension in return for his making shuttles. He died abroad about the age of seventy-five.

The next important invention was made in connexion with the spinning of thread. From time immemorial thread had been spun by hand, but in 1738 Lewis Paul—the son of a French refugee who had settled in this country—with the aid of a skilled mechanic, John Wyatt, invented a machine on which thread was spun without the aid of human fingers. The invention consisted of at least two pairs of rollers, one revolving faster than the other, which drew out the thread to the requisite degree of fineness. A mill was erected at Birmingham and another mill was afterwards started in Northampton. However the enterprise was successful at neither place. Paul was short of capital, and his letters to Wyatt reveal the straits to which he was often

reduced in his desperate search to raise the necessary funds. Another reason for Paul's failure to achieve the commercial success which afterwards attended Arkwright's efforts in the same field was that his machine, though identical in principle, was inferior in point of construction. The subsequent fate of Paul's invention has given rise to much controversy; the problem is whether it entirely lapsed or whether it was revived in the next generation. One thing alone is certain: the practical application of automatic spinning was the work of Arkwright.

Richard Arkwright, one of the greatest captains of industry in this country and the most prominent figure in the history of the textile industries, was born in Preston in 1732. He was the youngest of thirteen children, and the impoverished circumstances of his parents threw him at an early age upon the world with none of the advantages of education to help him in the struggle for existence. He was apprenticed to a barber, and settled in Bolton where he obtained some reputation for his skill as a wig-maker. He had no knowledge of mechanics and no practical acquaintance with industrial processes, but he had a keen alert mind, an insatiable curiosity, and a genius for assimilating and developing the ideas of others. His natural gifts more than compensated for any deficiency of technical training, and he showed marked determination in pursuing his opportunities to the utmost. Among the manufacturers in whose midst Arkwright lived the shortage of yarn must have been a constant topic of conversation, and the wealth which awaited the fortunate discoverer of a new process fired the imagination of the poverty-stricken wig-maker. He was drawn irresistibly to mechanical experiments, and he came into contact with a clock-maker whom he employed to construct his apparatus. We cannot tell whether Arkwright's invention was the fruit of his own ingenuity, or whether he had stumbled by accident upon the secret of Paul's invention, or whether he was in any way indebted to any other inventor. All we know is that Arkwright came into possession

of the secret which was destined to revolutionize the textile industries and create the modern factory system.

Arkwright had now reached the first milestone along the road which was to lead him to fame and fortune; but to achieve his goal took him many years of unwearied application and devoted labour. He was almost penniless, and his pecuniary difficulties were not completely overcome until he entered into partnership with two wealthy manufacturers at Nottingham, who had abundant resources at their command. In 1769 he took out a patent for his machine. This was known as the water-frame and its leading feature was the use of rollers. The roving, or thick coarse thread, was inserted between a pair of rollers placed in a horizontal position one above the other. These rollers revolved in contact, and as they revolved they compressed and drew the roving from the bobbins. Another pair of rollers revolving several times as fast received the roving from the first pair, and their rapid revolutions reduced the roving into a fine thread. A twist was imparted to the thread by means of revolving spindles, with which the roving was connected as it was drawn out of the second pair of rollers. The machine patented in 1769 was intended only for the final process of spinning—to convert the roving into a fine twisted thread (yarn). A few years later, 1775, Arkwright patented another invention which adapted the system of rollers to the first process of spinning—to convert the wool into rovings. He also invented a machine for carding wool by revolving cylinders in lieu of hand-cards. The series of inventions associated with Arkwright's name thus enabled all the preliminary processes of the cotton and woollen industries to be done by machinery instead of by hand. Henceforth wool could be carded, made into rovings, and spun into yarn without recourse to human fingers. The machine erected by Arkwright at Nottingham was driven by horse-power; then he built a mill at Cromford in Derbyshire where he employed water-power, and this gave his machine the name of water-frame; finally Watt's steam engine was applied to

the cotton industry at Papplewick (Nottinghamshire) in 1785 and at Manchester in 1789. Through the use of steam the water-frame became known as the throstle.

Arkwright, unlike the majority of the inventors, won both fame and fortune. He received a knighthood at the hands of George III and was made high sheriff of Derbyshire. He reaped a rich harvest alike by the sale of his machines before his patent rights were cancelled, and by partnerships which gave him a controlling interest in numerous concerns. Among the men of the 'Industrial Revolution' he holds a leading place. It is true that he was not the original inventor of the mode of spinning by rollers, the pivot of all his other achievements; but he knew how to turn an invention to practical account. He was able to develop and bring to perfection the germs of the great ideas contained in the rude imperfect machines which he made the basis for his own creations. And his inventive faculty was combined with an unrivalled skill in business, shrewd judgment and a genius for organization. He was the founder of the modern factory system: not indeed that he erected the first factory in England, but he built up great business enterprises which formed the model for similar undertakings in every part of the country. In this way he inaugurated a new epoch.

The second of the great inventions in the spinning of cotton and wool was the work of James Hargreaves a weaver of Stand Hill near Blackburn, who about 1767 invented the spinning jenny. The merit of Hargreaves's invention was that it enabled spinners to use not one spindle alone, as had been the practice from time immemorial, but eight and ultimately as many as a hundred and twenty spindles at a time. The water-frame and the jenny differed in several respects. The water-frame, although originally employed to reduce the rovings into yarn, was subsequently adapted for all processes of spinning: the jenny was restricted apparently to the final process. Moreover the thread spun on the water-frame was harder, that is, more firmly twisted; and this permitted pure

cotton cloth to be manufactured. Hitherto most cotton cloth had consisted of a mixture of linen and cotton to make it strong. Lastly the jenny was an implement which the artisan was able to work in his own cottage with his own hands: the water-frame was a machine which required more than human strength to give it motion. The difference between the jenny and the water-frame thus became the starting-point of a new economic order. The invention of the former was compatible with the retention of the domestic system of industry: the adoption of the latter brought in its train the establishment of the factory system.

Samuel Crompton, the inventor of the mule, first saw light at Firwood near Bolton in the year 1753. He was sixteen years of age when he learnt to spin upon the jenny and barely twenty-one when he started to make improvements, a task which occupied his leisure moments for the next five years. His patience and ingenuity were rewarded with success; but he was too poor or perhaps not enterprising enough to purchase a patent, and too diffident to protect his invention from prying eyes. Confiding in the liberal promises of the manufacturers, he yielded to their solicitations and disclosed the secret of his invention. No sooner was his machine in their hands than he was made conscious of the cruel deception practised upon him. In exchange for a secret which was worth a fortune to its possessor, the inventor obtained the paltry sum of £106; and many of the manufacturers not only declined to pay the guinea or half-guinea to which they had pledged themselves, but even turned the inventor from their doors when he asked them for payment. This treacherous conduct rankled permanently in Crompton's mind and clouded the rest of his days with gloom. After the lapse of many years Parliament recognized the claims of the inventor, one of the architects of England's industrial greatness, by giving him a grant of five thousand pounds.

Crompton, like Edmund Cartwright, was never able to use his inventive genius as a lever with which to raise up

great business enterprises. His shy and retiring disposition was unsuited for the storm and stress of competitive life. He died in 1827, yet long before his death the mule had taken precedence of the water-frame and the jenny. His invention combined the principles of both Arkwright's and Hargreaves's machines:

> 'The forces of nature could no further go;
> To make a third she joined the former two.'

It utilized the system of rollers which drew out and lengthened the rovings, as well as the spindles which served to impart the twist. The rovings as they came from the bobbins passed through the rollers to spindles placed on a spindle carriage—a movable box which ran on wheels. As the rollers gave out the rovings from the bobbins, the spindle carriage receded from the rollers, drawing out and lengthening the thread. This stretched the thread to the requisite degree of fineness and effected the necessary twist. Many improvements were afterwards made in the mule as practical experience brought to light its deficiencies. The most important innovation was the work of Richard Roberts, who invented an automatic or self-acting mule in 1825. The year in which water-power was applied to the mule was 1790. The mule produced finer thread than either the jenny or the water-frame, and rendered it possible to manufacture superior cotton fabrics.

The introduction of machinery in the manufacture of yarn removed the defects of hand-spinning. For one thing machine-spun yarn was more uniform in quality; it was also finer and stronger. Another result of machinery was to liberate the weaver from his dependency upon the hand-spinner; he now had an unlimited supply of material at his disposal. There was no longer a shortage of yarn, for it was estimated that a mule or a water-frame could provide material for about ten looms. Previously half-a-dozen spinners or more might be required to supply one loom. The scarcity of yarn had been an obstacle to the expansion of

the textile industries, since an increase in the demand for cloth could not be met automatically by an increase in the output of thread. Now the position was reversed: instead of a shortage of spinners there was a shortage of weavers, and the invention of machinery in the weaving process seemed imperatively demanded. This was the achievement of Cartwright.

Edmund Cartwright, the inventor of the power-loom and the combing machine, was born in 1743 in Nottinghamshire. He entered the Church but a curious chance of fate changed the current of his life and embarked him on an inventor's career, which was destined to give him an enduring place among the creators of modern industry. He has himself related the story how he happened to be at Matlock in 1784 and 'fell in company with some gentlemen of Manchester, when the conversation turned on Arkwright's spinning machinery. One of the company observed that, as soon as Arkwright's patent expired, so many mills would be erected and so much cotton spun that hands could never be found to weave it. To this observation I replied that Arkwright must then set his wits to work to invent a weaving machine. This brought on a conversation on the subject in which the Manchester gentlemen unanimously agreed that the thing was impracticable; and in defence of their opinion they adduced arguments which I certainly was incompetent to answer or even comprehend, being totally ignorant of the subject having never at that time seen a person weave.' He then proceeded to invent a power-loom, for which he took out a patent in 1785.

Cartwright's faith in his machine was unbounded. With all an inventor's eager enthusiasm he sought to turn his discovery to practical account. 'May you weave your webs of gold,' wrote the poet Crabbe to him, but the wish remained unfulfilled and from the start misfortune dogged the inventor's footsteps. A Manchester firm erected a factory large enough to house five hundred power-looms, and a few were set to work as an experiment. The looms are said to have

responded 'exceedingly well;' they wrought the work for half the amount of the wages paid to hand-loom weavers, and the latter threatened to destroy the mill. The threat was carried into execution and the mill was burnt down. As a result Cartwright found himself ruined, for no other manufacturer ventured on repeating the experiment. While his discoveries were destined to confer inestimable benefit upon the textile industries, the inventor himself reaped only a harvest of disappointments, though eventually he was awarded by the government a grant of ten thousand pounds. One reason for his failure to convert his discoveries into a source of pecuniary profit was the imperfect nature of his machines as they were first given to the world; another was the difficulty of protecting his patents against infringement.

Cartwright's fertile genius, restless energy and remarkable versatility were displayed in the range of his mechanical researches. His greatest achievement after the invention of a power-loom was the construction of a combing machine for combing wool—the most important preliminary process in the worsted industry. In his erection of a combing machine the inventor seems to have been guided by the same principle which underlies the mechanism of the power-loom: to imitate as closely as possible the movements of the hand but to substitute a mechanical force for manual labour. The genius of Edmund Cartwright pointed the way, yet fifty years were to elapse before the combing machine attained practical value and the requisite degree of perfection. Within a century of Cartwright's own invention the number of patents taken out in connexion with combing machines was nearly five hundred; and this affords convincing proof of the tenacity and zeal with which a long line of inventors—Heilmann, Donisthorpe, Lister, Holden and Noble—applied themselves to the problem.

The invention of machinery would have been robbed of much of its significance but for the discovery of a motive force with which to drive the machines. It was a fortunate

coincidence that the year in which Arkwright took out a patent for the water-frame was also the year in which Watt took out a patent for the steam engine. The coincidence is a striking one though it was purely fortuitous, because in its origin the steam engine was devised for the purpose of draining coal-mines.

James Watt, the inventor of the modern steam engine, was born at Greenock in Scotland in 1736. When eighteen years old he was sent by his father to Glasgow to learn the profession of a mathematical instrument-maker. He found no one there who could teach him the craft, and so he proceeded to London where he remained for twelve months. Upon his return to Glasgow he endeavoured to set up in business, but was refused permission to open a shop by the gild of hammermen since he did not possess the qualifications of either patrimony or apprenticeship.[1] The University came to his rescue by allowing him to establish a workshop within its precincts, over which the gilds had no jurisdiction. Here his attention was drawn to the problem of the steam engine, and immediately it became the absorbing interest of his life.

The basic principles of the steam engine—the piston and the cylinder, the expansive force of steam and the creation of a vacuum by its condensation—were already known when Watt embarked upon his investigations. The engines invented by Thomas Newcomen had been in operation for a quarter of a century before Watt was born: they were used for pumping water out of coal, tin and copper-mines. However they suffered from the serious defect that they were wasteful of fuel; and Watt, when a model of Newcomen's engine came into his hands, speedily became cognizant of the defect. 'In the state,' he subsequently related, 'in which I found the steam engine it was no great effort of mind to observe that the quantity of fuel necessary to make it work would for ever prevent its extensive utility. The next step in

[1] I.e. he was neither the son of a burgess nor had served an apprenticeship in the borough.

my progress was equally easy—to inquire what was the cause of the great consumption of fuel: this, too, was readily suggested, viz. the waste of fuel which was necessary to bring the whole cylinder, piston and adjacent parts from the coldness of water to the heat of steam no fewer than from fifteen to twenty times in a minute.' He then tells how he conceived the idea of a separate vessel for condensation of the steam; and it was the notion of a separate condenser which furnished the solution of his problem. 'The idea came into my mind that as steam was an elastic body it would rush into a vacuum, and if a communication were made between the cylinder and an exhausted vessel, it would rush into it and might be there condensed without cooling the cylinder. The invention was complete in so far as regarded the savings of steam and fuel.' Shortly afterwards two friends of Watt happened to meet, and one observed to the other: 'Well, have you seen Jamie Watt?' 'Yes.' 'He'll be in fine spirits now with his engine?' 'Yes, very fine spirits.' 'Gad! The separate condenser's the very thing: keep it but cold enough, and you may have a perfect vacuum whatever be the heat of the cylinder.'

Between the conception of an idea and its practical application on a commercial basis there is a wide gulf; and many years were destined to elapse before Watt's invention attained maturity. One of his main difficulties was the want of competent mechanics to execute his designs. 'My principal hindrance in erecting engines,' he wrote, 'is always the smith-work.' The turning-point in his career occurred when he became associated with Matthew Boulton, a prominent manufacturer whose Soho works were near Birmingham. Boulton had the skilled workmen, the financial resources, the business acumen and the driving force, all of which were necessary to carry Watt's invention to a successful issue. Watt took up his residence at Birmingham in 1774, five years after he had taken out a patent for his invention which was still (as Boulton described it) 'a shadow as regarded its practical utility and value.' From this point onwards progress

began to be rapid. Two engines were brought into use for pumping purposes, and a third was built for John Wilkinson's iron-works to blow the blast furnaces. Orders now came pouring in and the success of the steam engine was assured.

The next stage in the history of the steam engine was marked by efforts to produce rotary motion, in order that it might be employed for driving machinery. In 1781 Watt took out a second patent in which his engine was adapted for this end. Wind-mills and water-mills were affected by the vagaries of nature but the steam engine was independent. 'There is not a single water-mill now at work in Staffordshire,' wrote Boulton to Watt on one occasion. 'They are all frozen up, and were it not for Wilkinson's steam-mill the poor nailers must have perished; but his mill goes on rolling and slitting ten tons of iron a day, which is carried away as fast as it can be bundled up; and thus the employment and subsistence of these poor people are secured.' Yet Watt wished at first to discourage the orders for engines to drive machinery. 'Some people at Burton,' he informed Boulton, 'are making application to us for an engine to work a cotton mill; but from their letter and the man they have sent here I have no great opinion of their abilities. If you come home by way of Manchester please not to seek for orders for cotton mill engines, because I hear that there are so many mills erecting on powerful streams in the north of England that the trade must soon be overdone and consequently our labour may be lost.' The course of events showed that these apprehensions were unfounded. When Watt died in 1819 the steam engine was used for an infinite variety of purposes. Man had successfully harnessed the forces of nature to his triumphal chariot. The problem of production was now solved; and the stage was set for the inauguration of the mechanical age.

'I sell here, Sir, what all the world desires to have—Power.' The remark was made to Boswell, the biographer of

Samuel Johnson, during his visit to Boulton's works.[1] By the end of the eighteenth century the steam engines erected by Boulton and Watt—at first they acted as designers and consultants and later as makers of engines in their own foundry—numbered nearly three hundred: in textile mills, coal and copper-mines, canals, the iron industry, breweries and corn mills where the traditional mechanical contrivance of mill-stones was superseded eventually by rollers. The steam engine was applied to the blast furnace in 1776, to Wedgwood's pottery works in 1782, to a cotton mill (at Papplewick in Nottinghamshire) in 1785, to the printing press (*The Times*) in 1814, to river navigation in the twenties, and to railway locomotives in the thirties. It thus passed through three stages of development—draining water from mines, driving machinery, propulsion in traction. From being 'a giant with one idea,' as Coleridge called it in reference to its original purpose, it became the pivot of modern industry and transport. Nevertheless steam-power had not entirely displaced water-power which together with wind had long been utilized by industry[2] (even at the beginning of the present century some Yorkshire mills were relying upon steam and water or even water alone). At the middle of the nineteenth century steam-power was employed in the cotton industry only on a small scale, surprisingly enough; and its progress elsewhere was still more tardy. In this, as in other respects, the notion of a revolution which abruptly altered the industrial character of English society is not borne out by the facts.

While steam-power was thus slowly extending its kingdom, its supremacy was already being challenged by new forms of prime movers—gas, electricity and oil. Gas[3] was consumed by internal combustion engines in the sixties. Its introduc-

[1] The remark is also attributed (in *Richard Cobden's Speeches*) to Watt in his interview with George III.

[2] In the thirties of the nineteenth century the number of water wheels was three-fifths of the number of steam engines.

[3] Gas produced by coal had been used as an illuminant from the beginning of the nineteenth century.

tion enabled small manufacturers to install power-driven plant in their workshops: the change-over was particularly noticeable in the light metal industries during the seventies and eighties. The consequent decline of handicraft methods was accelerated in the last years of the nineteenth century when electric motors gave every producer the means to utilize power. Thus in many industries the handicrafts did not succumb to mechanical methods of production until in the closing decades of the century a cheap and easily-handled prime mover became available to those who had not adopted the practice of renting steam-power in a large establishment. An outstanding event was the discovery of a new motive force in oil which became the fuel of the automobile industry, began to supersede coal in ocean navigation, and ultimately made possible the conquest of the air. The consumption of oil expanded rapidly after the first world war when within a few years eight times as much oil was imported into England as before the war.

Two features of the 'Industrial Revolution' have been reviewed—the invention of machinery and the introduction of a motive force to drive it. We now turn to the third feature—the metals used for making the machines.

The production of iron and steel involves two main processes. The initial stage is to extract iron from the iron ore which comprises other substances. This is done by smelting the ore in a blast furnace with the aid of the carbon contained in coal or charcoal. The product is termed pig iron, and the subsequent stages depend upon the way in which it is afterwards treated. It may be poured into moulds in a foundry to make castings: it may be hammered in a forge until it becomes malleable (bar or wrought iron): it may be converted into steel by varying the proportions of the carbon content. Cast iron is described as 'hard but brittle,' wrought iron as 'soft but tenacious,' steel as 'strong and tough.' Corresponding to the various processes were the epoch-making metallurgical discoveries

which ushered in an age of iron followed by an age of steel.

The first discovery was the most important since on it hinged all the rest. In the textile industries the invention of machinery had served to remedy the shortage of hands in spinning and then in weaving. In the iron industry the problem was the shortage of fuel. For hundreds of years iron ore was smelted with wood charcoal, of which there was an increasing scarcity due to the destruction of forests. Apprehensions of a timber famine promoted repeated efforts to substitute coal for wood in the production of pig iron. The task of smelting iron ore engaged the attention of inventors for two centuries; and although Abraham Darby achieved success early in the eighteenth century (1709), several decades elapsed before the new method was generally pursued. The next step was to utilize mineral fuel in place of wood charcoal for making bar iron. The twin processes which made this possible are associated with the name of Henry Cort (1783–4). One was puddling—melting the pig iron in a coal furnace and stirring it to remove unwanted elements; the other was rolling—passing the iron through rollers instead of employing hammers. Cort takes rank among the inventors because while he was not the originator he brought the two processes together. His career furnishes another illustration of the misfortunes which befell so many of the inventors inasmuch as he reaped small benefit from his experiments. Now that coal was used in all stages of iron production and the cost was considerably diminished, England no longer needed to import foreign iron: instead she became an exporter. The third development in the iron industry was the application of Watt's steam engine—first to the blast furnace (as early as 1776), then to the forge hammers, subsequently to the rolling and slitting mills. The fourth cardinal improvement was James Neilson's invention of the hot air blast in 1828. The consumption of coal in the furnaces was reduced eventually to one-quarter by his device of heating the air blast.

The introduction of high-grade steel in England was the achievement of Benjamin Huntsman who about 1740 invented the crucible process. Crucibles were clay pots which were subjected to such heat that the metal was freed from impurities. Crucible steel was more uniform in quality as well as harder than other kinds, and to this day the best steel is made in crucibles. However its cost limited its use to special purposes, and the production of steel which not only had strength and tenacity but also was cheap enough for general usage was deferred for more than a hundred years. Then in the latter half of the nineteenth century three fresh processes of steel-making marked the beginning of another phase in the industry. The first was disclosed by Henry Bessemer in 1856. It consisted in driving a blast of air through the mass of molten pig iron in a 'converter' in order to remove all the carbon, after which the iron was turned into steel by adding the requisite amount of carbon and other necessary elements. The second, the 'open-hearth' of William Siemens in the late sixties, afforded opportunity among its other advantages to test the metal in the furnace by samples during its conversion into steel. Both these processes suffered from the defect that they demanded non-phosphoric ores. The third process invented by Gilchrist and Thomas at the end of the seventies enabled steel-makers to eliminate phosphorus, and so use phosphoric ores which exist in great quantities. The term basic steel means that the phosphorus has been removed during the conversion: acid steel denotes that the ore itself in its natural state was largely free from phosphorus.[1]

In studying the effects of the inventions on English society certain important facts must be borne in mind. The expression 'Industrial Revolution' is apt to convey an erroneous idea of the rapidity with which the old economic order yielded place to the new. It is often assumed that the

[1] Iron ore is now also smelted by electricity. For the quantities produced by these different processes in recent decades, see Chapter Twelve.

inventions forthwith created the factory system and extinguished the domestic system. The mill-owners undoubtedly made their appearance very early in the cotton manufacture, where they erected buildings in which to house the water-frame; and their example was followed elsewhere. None the less the traditional structure held its ground successfully in some branches of the textiles even beyond the middle of the nineteenth century. In Yorkshire only half the workers engaged in the woollen manufacture were employed in factories as late as 1856; the rest continued to work in their own homes. Indeed the extinction of the domestic system in the woollen manufacture belongs to the closing years of the nineteenth century; while its decline has also been gradual in many other industries. To-day there still exist some survivals of the handicrafts working on the domestic basis. Hence the question arises whether the term 'revolution' is appropriate when applied, not to violent political changes, but to an economic process for which the ground had been long prepared and which in its actual operation proved to be decidedly more evolutionary than catastrophic.

There are several reasons why the introduction of machinery and the extension of the factory system proceeded more slowly than was formerly supposed. To begin with, some of the inventions were compatible with the retention of the domestic system. Here we must draw an important distinction between implements and machinery. An implement is a tool worked by hand; a machine is worked by power—it does the work under human guidance. An implement, therefore, can be used in the home; the machine must as a rule be used in a factory. Thus the fly-shuttle was an implement which gave the domestic weaver a better command over his instrument, namely, the hand-loom: similarly Hargreaves's jenny and at first Crompton's mule were feasible in cottage homes. Other inventions, again, from the start required power, such as Arkwright's water-frame, and in these cases factories were indispensable.

Hence the factory became essential only when a particular invention necessitated the use of power. In the next place, the inventions at the outset were often imperfect and it was not until they had been greatly improved that it became possible to apply them to industrial purposes. Technical factors were also responsible for the slow introduction of machinery; for instance, the tardy progress of steam-weaving in the woollen industry can be explained on technical grounds. The primary characteristic of woollen cloth is its felting property which enables the fibres to be interlaced during the fulling or thickening process: hence woollen yarn must be spun loosely. Weaving was thus rendered a more difficult operation since the threads were easily broken, and consequently the power-loom worked no faster than the hand-loom. In this peculiarity, rather than in the alleged conservatism of the woollen manufacturers as compared with the cotton manufacturers, we may find one of the main causes of the retention of the domestic system in the woollen industry during the earlier half of the nineteenth century. The power-loom was better fitted for worsted weaving, yet even here its adoption was belated owing to defects in the machinery and the fact that at first the saving in labour was not considerable. Nor were these technical obstacles confined to textiles. Wrought iron was not suited to the machine, so that in some metal trades mechanical methods of production were deferred until wrought iron came to be replaced by steel in the last decades of the nineteenth century. We must, therefore, avoid the assumption that the year in which an invention made its appearance was also the time when it was generally applied.

A further reason for the delay in utilizing machinery was the reluctance shown by employers to break away from their customary practices, whether through conservatism or the expense and trouble involved or fear of opposition on the part of their work-folk. It was particularly noticeable in the west country and in East Anglia. Moreover the domestic workers, when their resistance proved unavailing,

pursued the fatal policy of 'lowering the dike'—that is, they submitted to repeated reductions of wages in order to compete in point of cheapness with machinery; the sacrifice they thus made retarded, though it could not avert, the ultimate extinction of hand processes. And finally, in Yorkshire, the small manufacturers showed marked flexibility. Instead of opposing the new methods they turned them to their own account. They preserved their status as independent producers by combining their resources and purchasing machinery for their common use. They formed co-operative societies and bought machines which they employed for certain purposes, while the remaining processes were carried on at home. Similarly the 'garret masters,' as they were called, in the Sheffield cutlery and the Birmingham light metal industries maintained a precarious existence in the face of factory encroachment by hiring the use of power in a large establishment. Thus the introduction of machinery did not necessarily involve a reconstruction of industry nor the displacement of the older forms of organization based on the workshop and the cottage. From all this it will be seen that the disappearance of the domestic system was gradual, and that its decay depended upon a variety of conditions, partly technical partly non-technical.

The adoption of mechanical improvements in the textiles was broadly as follows.[1] The fly-shuttle was accepted in Yorkshire in Kay's own life-time, but in the west of England it was delayed until the end of the eighteenth century. Hand-spinning in the cotton and worsted industries was generally superseded in the first decade of the nineteenth century, though in the woollen industry its survival was somewhat more protracted. The conquest of the hand-loom by the power-loom proved a much slower process than the conquest of hand-spinning by machine-spinning. In regard to hand-combing the middle of the nineteenth century may be taken as the period at which manual operations virtually became extinct.

[1] A fuller account is given in Chapter Twelve.

Another preliminary observation must be made: the evils attributed to the inventions were not wholly due to the introduction of machinery. They were caused in some measure by the circumstances of the period. It was a misfortune for England that, at a time when the tempo of economic change was being accelerated and the race was to the swift and the strong, the inevitable evils of the transition were aggravated by a succession of wars. First came the Seven Years' War, then the American War of Independence, then the Revolutionary and Napoleonic Wars. They had a detrimental effect upon trade and industry, and were partially responsible for the high price of food because it was difficult to import corn from the Baltic. This produced intense distress among the poor whose wages did not rise in proportion. Nor did the establishment of peace in 1815 bring with it plenty, for though foreign corn became available its importation was checked by the corn laws. Moreover Europe was too impoverished to buy our goods, while in addition the English labour market was flooded with many thousands of discharged soldiers and sailors. Further the currency was inflated with the result that its value was depreciated. At the same time there was an unparalleled growth of the national debt, coupled with a fantastical fiscal system since the succession of wars necessitated very heavy taxation. Again it was largely on account of the wars that a free hand was given to employers during the epoch of the inventions to transform the system of industry without any attempt at control or supervision on the part of the state. Economic forces were allowed to operate without hindrance, partly from the conviction that in the life and death struggle with France the production of wealth must over-ride all humanitarian considerations. It is improbable that, if circumstances had been normal, the government of the day would have shown its apparent indifference to the evils which attended the introduction of machinery. In short the dislocation of economic life helps to explain much of the prevailing distress; and the war atmosphere helps to explain the failure of the

state to ameliorate the condition of the working class. Nevertheless, while making full allowance for the character of the period, it would be a mistake to look for the explanation of the current social misery purely to the wars. Even had there been no wars, there would still have been great suffering as the handicraft industries were slowly crushed to death beneath the weight of the overpowering competition of machinery. The suffering could alone have been averted by a frank recognition on the side of the community that it owed a duty to those who were the victims of industrial progress. But it was only very gradually that the community began to awaken to a full sense of its responsibilities towards them.

And lastly: the interpretation of the 'Industrial Revolution' put forward in this book does not imply any desire to minimize the epoch-making status of the inventions. The stimulus given to the productive agencies by the application of mechanical power to industry and transport is a commonplace; the increased command which man has acquired over the resources of nature merits the stress which is rightly laid upon it. These are trends whose importance no one will be tempted to belittle—but neither ought we to be tempted to magnify and distort their meaning by a false perspective which under-estimates the degree of economic development attained prior to the inventions. We must not let our minds be dazzled by the glamour of statistics. The true gauge of economic progress lies less in the scale of operations than in the fundamental adjustments which man makes in his efforts to satisfy his wants. From this standpoint the rise of individualism, and the far-reaching consequences which flowed from it, have a profound significance. For they show that the 'Industrial Revolution' was not a watershed, nor was it the genesis of a new industrial society composed of capitalist employers and proletarian wage-earners. Any history of the 'Industrial Revolution' which does not take due account of the facts that in England the industrial regime was already largely capitalist in character, and that the 'inventions'

were the creation not the creators of a capitalist society—or which teaches that the English artisan was transformed by the introduction of machinery from an independent producer into a wage-earner—can only yield a fresh lease of life to an historical myth.

The principal effect of the inventions on English society was the shifting of the centre of gravity from agriculture to industry. In the eighteenth century England was primarily an agricultural country, although industry and commerce had already attained considerable dimensions: in the nineteenth century she became primarily an industrial country. Agriculture, though still one of the greatest branches of the national economy, now occupied a subordinate position when weighed in the balance against all the other branches. The population to-day is mainly an urban population; it is engaged chiefly in industrial and commercial pursuits. The results of such a pregnant change have been conspicuous. It meant first that the prosperity of the realm, instead of being broad-based on land, was henceforth to rest on the unstable foundations of trade. This in its turn meant that the mass of the nation was for the future dependent for its livelihood upon the existence of oversea markets, which were liable to be closed against us at any moment on account of wars, tariffs or other causes. Taking advantage of the opportunities which the inventions had placed within her grasp, England abandoned the attempt to produce her own food and built up instead vast manufactures, exchanging her products for food and raw materials from abroad. Hence her policy was directed towards maintaining and acquiring markets to supply her needs and absorb her surpluses; and in consequence the old conflict for empire developed into a conflict for markets.

The next important outcome of the inventions was the growth of the factory system as the predominant form of industrial organization. The factory system is of course much older than machinery. In the sixteenth century, as we have seen,

a number of woollen manufacturers set up factories, and gathered servants and looms under one roof. We meet occasionally in the eighteenth century with textile factories but the practice was not general. Only in one industry is there any substantial evidence of a factory system before the time of Arkwright—namely, in silk spinning which used machinery worked by water-power, and here many hundreds were employed in a single factory. Apart from this exception the factory age began with the introduction of Arkwright's water-frame, which made the factory system an economic necessity; and in the face of economic necessity social objections were swept away. The establishment of the factory stage brought in its train two important changes in the capitalist system, as it had functioned in the domestic stage. One involved a transformation in the character of the employer. In the domestic stage he had owned the materials but not the instruments of production: he was therefore concerned with buying the materials and selling the finished product rather than with the actual processes. Now he owned both the materials and instruments, he carried on the work under his own roof, he made it his function to study and perfect in detail the whole business of manufacturing. The other change completed the destruction of the economic independence of the artisans, who in the domestic stage had owned the instruments of production and served more than one employer. Yet while the factory system thus rendered the wage-earner doubly dependent upon the capitalists, the balance was redressed—and more than redressed—by the fact that the concentration of the workers under a factory roof gave an immense impetus to the organization of labour in trade unions, and thus has placed them in an infinitely stronger position for bargaining on equal terms with the employer.

The most serious indictment laid against the inventions was their reaction upon the demand for labour. The use of machinery aroused vehement opposition from the workers, and one writer asked: 'Who does not consider the employment of

machinery one of the greatest evils that ever befell the country?' Opposition was not confined to words. In the attempts made to prevent the introduction of machinery there was frequent recourse to violence, for example, the Luddite riots in 1812. The fury of the Luddites was directed primarily against gig mills and shearing-frames used to crop the loose fibres and impart a smooth surface to the cloth. A verse of the croppers' ballad ran:

> 'Great Enoch[1] still shall lead the van.
> Stop him who dare! Stop him who can!'

At our time of day it is impossible to doubt the benefits which have accrued from mechanical methods of production. Machinery effects an economy of labour and cheapens the price of commodities; this in its turn stimulates the demand and so may ultimately provide more work than is at the moment actually curtailed. On the other hand, the invention of machinery meant at least a temporary displacement of labour; and it is no consolation to the workman, whose skill is rendered useless by some technical development, to know that at some distant date a larger number will be found employment in his industry. It would be unfair, then, to regard the hostility shown by the workers to machinery as wholly unreasonable. If the community had been prepared to undertake that no individual should suffer from changes imperatively demanded in the common interest, it would have been in a stronger position to denounce the anti-social policy of blocking economic change. Eventually the introduction of machinery greatly increased the demand for labour: it gave an immense stimulus to three industries—cotton, coal-mining and engineering. Each was already in existence but now grew to enormous dimensions. Accordingly machinery has provided the means for the employment and maintenance of a much vaster population.

What has been the result of the inventions not on the number but on the welfare of the wage-earning commu-

[1] The name given to the big hammer employed in the work of destruction.

nity? This is an important criterion of national prosperity, since the final test of economic progress is the situation of those upon whom the foundations of society must ultimately rest. Much of the criticism directed against machinery and the factory system is based upon a misconception of the conditions which prevailed in the older industrial order. Thus a common charge against the inventions is that they have made the worker into a machine-minder, killed the creative impulse, and destroyed man's pleasure in his work. But those who praise the old handicrafts overlook the fact that most of the operations, in the textiles at any rate, were already mechanical in character even before the use of machinery. In the textiles the processes of carding, combing, spinning, weaving and dressing, consisted in the monotonous repetition of certain movements of the hand. They afforded little or no scope for any expression of individuality, which is the justification of true craftsmanship. Another criticism was voiced by John Stuart Mill in his *Principles of Political Economy* (1848). 'Hitherto it is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being.' Certain processes were even rendered more arduous as in the iron industry; others became less tedious and laborious as in power-loom weaving; in general it appears correct to say that machinery has relieved the workers of some of the drudgery of manual toil. Mechanical methods are more exacting than a handicraft in that they involve a more intense application to work, though against this may be set the greater opportunities for leisure. One undoubted advantage is that they have enabled tasks which were often unpleasant and unhealthy to be done by machinery instead of by hand; for instance, in the preparatory processes of the woollen and cotton industries. Hand-loom weaving itself was not necessarily an unhealthy occupation, yet prior to the introduction of the fly-shuttle weavers were liable to breast disorders. Moreover the erection of factories, while it subjected the mill hands to a novel and strict discipline, had its compensation in the fixed and far

shorter hours ultimately imposed by the state; and from a health point of view it was better to carry on industry in large airy buildings, as later, rather than in crowded tenements where the same room had often to serve as a workshop and living place. Another thing is that the use of machinery raised the intelligence and improved the character of the industrial population, for it required of the worker both mental alertness and regular conduct. A feature of modern industry is the 'dilution of labour' whereby much of the skilled labour formerly expended on a product is superseded by the semi-skilled labour of operatives confined to repetition processes. Where artisans are recruited from the ranks of unskilled labourers, there is an improvement in the social scale as well as in the nature of the occupation. At the same time a fresh demand is created for skilled mechanics to fashion and adjust tools, to construct and keep in repair machines; and the increasing complexity of these operations makes a corresponding claim upon their intelligence. Similarly more skill is needed to build or work the modern liner than the wooden sailing ships of former days. Finally machinery has raised the standard of life of the community, because it has cheapened the price of commodities and afforded in the main a greater command over necessaries, amenities and luxuries. The population of England more than trebled in the nineteenth century, yet at the end of the century the masses were in a material sense better off than at the beginning.

In estimating the significance of the 'Industrial Revolution' we must not overlook the condition of those who remained outside the new economic order. In the case of the spinners the effect of machinery was that spinning as a cottage industry became extinct. The rural folk thus lost a subsidiary source of income since spinning had been carried on by women and children in almost every village throughout the country. It is true that the spinners were very poorly paid for their toil; in the seventeenth and eighteenth centuries England's greatest industry rested on the basis of

sweated labour. Nevertheless spinning was a useful addition to the family income, and the loss of it meant that farm labourers became entirely dependent on their own scanty earnings in agriculture. Even more distressing was the situation of the hand-loom weavers. The story of their sufferings constitutes the most melancholy chapter in the history of the inventions. It is the classic example of the triumph of economic progress at the expense of social welfare.

At first the hand-loom weavers benefited by the inventions. They profited by the enormous output of yarn from the spinning factories, and as a result of the increased demand for their services they reaped a harvest of high wages. The muslin weavers of Bolton may be cited in illustration of their flourishing condition, though the prosperity of other weavers was much more subdued. 'The trade was that of a gentleman,' a witness informed a parliamentary committee. 'They brought home their work in top boots and ruffled shirts, carried a cane, and in some instances took a coach.' Many weavers at that time, we are told, 'used to walk about the streets with a five-pound Bank of England note spread out under their hatbands; they would smoke none but long "churchwarden" pipes, and objected to the intrusion of any other handicraftsmen into the particular rooms in the public-houses which they frequented. This prosperity did not continue, and few operatives endured greater privations than the hand-loom weavers of Bolton for the succeeding fifty years.'

Among the factors responsible for the distress of the hand-loom weavers the most important was the drastic fall in wages. The wages of a weaver in many cases declined (1797–1833) nearly 80 per cent. The report of the hand-loom commissioners published in 1840 showed that weavers all over England were earning from five to seven shillings a week, sometimes a trifle more but sometimes even less; they were also said to be out of work one-third of their time. The weavers' union estimated in 1828 that the minimum amount sufficient to keep a man, his wife and three children,

was 15s. 8d. a week; and as the earnings of the weavers fell considerably below it, the commissioners reported that the condition of a pauper in the workhouse was superior to that of a weaver's family.

Some striking testimony as to the position of the hand-loom weavers in the neighbourhood of Huddersfield was given by Richard Oastler, the stalwart champion of factory legislation. 'I remember one particular circumstance that struck me very forcibly, for it was the very day when I read the speech of the king to this House in which he said: "The manufacturing districts are in a state of prosperity." On that very day I met with several of those weavers who were "manufacturing" operatives, and I questioned them very closely; and I found that on that day when they were said to be in such a state of "prosperity" those men—and those women too—were carrying burdens on their backs eight or nine miles to fetch their work and then had to carry them back again, and they were making from 4s. 6d. to 5s. 2d. a week clear wages.' In reply to the question: 'How many hours a day do the weavers generally work?' he answered: 'Those persons whom I have asked say from twelve to fourteen hours a day, but I am speaking of weavers in constant work. I very often find them going home without work at all. There are scores and hundreds of families in the district that I am now alluding to, to whom a piece of flesh meat is a luxury; it does not form a regular article in their daily consumption; they generally live upon porridge and potatoes, and they do not know what it is, many of them, very many of them, to taste flesh meat from year's end to year's end, except somebody gives them some. But as to their clothing they are clothed with rags, and their furniture is such as I am sure I cannot describe.'

Oastler's statements are corroborated by an overwhelming mass of evidence. The following is an official summary of the material laid before a parliamentary committee in 1834: 'A very great number of these weavers are unable to provide for themselves and their families a sufficiency of

food of the plainest and cheapest kind; they are clothed in rags and indisposed on this account to go to any place of worship or to send their children to the sunday schools; they have scarcely anything like furniture in their houses; their beds and bedding are of the most wretched description, and many of them sleep upon straw; notwithstanding their want of food, clothing, furniture and bedding, they for the most part have full employment; their labour is excessive, not infrequently sixteen hours a day; this state of destitution and excessive labour induces them to drink ardent spirits, to revive their drooping spirits and allay their sorrows, whereby their suffering is increased; their poverty and wretchedness cause many to embezzle and sell the materials entrusted to them to be worked up, thus destroying the morals of the weavers.' The hand-loom weavers attributed their situation to a variety of factors, including the corn laws and the restoration of the gold standard. But the fall in their wages can be explained partially by other causes. The weavers were in competition with machinery. The power-loom was adopted only gradually yet it set the pace; and the ability of the power-loom master to undersell the hand-loom master forced the latter to cut rates of payment. Machinery was thus the great 'screw,' and the ever-present menace of its introduction sapped the weavers' will to resist. Again their weakness in bargaining strength was a fatal handicap in opposing reductions in their earnings. They were not organized in strong trade unions, for they were not concentrated under one roof like factory operatives and lived in isolation, their poverty could not stand the strain of a weekly contribution, and their instruments of production were their own property so that in a strike they mainly suffered. Moreover the ease with which hand-loom weaving was learnt made it a magnet for the destitute from all other classes. Farm labourers displaced by the agrarian changes from their traditional occupation, and Irish immigrants driven to invade the English labour market, flocked to the large industrial centres. Here they created a new race

of hand-loom weavers accustomed to a lower standard of living and prepared to work at inferior rates of remuneration. In order to eke out their scanty resources the weavers put their children at an early age to weaving, thus involving them in the meshes of the same remorseless destiny in which they were themselves inextricably entangled.

The fate which befell the hand-loom weavers overtook also the wool-combers, who had formerly held the whiphand over their employers since their numbers were limited, their work demanded great skill, and they were not tied to one particular locality. Nevertheless they did not succumb without strenuous resistance. The most famous strike in their history broke out in 1825 and lasted five months. After its failure their condition underwent a rapid deterioration. Their sufferings were intense, they worked long hours in an over-heated atmosphere, and their toil was now wretchedly remunerated. The consciousness of their weakness constrained the hand-combers to adopt a humbler tone, which was in striking contrast with their proud and defiant attitude in the eighteenth century. In 1840 their union issued a statement which declared: 'Our lives have become miserable. We are compelled to work fourteen to sixteen hours per day, and with all this sweat and toil we are not able to procure sufficient of the necessaries of life wherewith to subsist on.' The hand-combers had clung to the conviction that Cartwright's machine would never prove workable, but the improvements made by a succession of inventors gave the death-blow to their fond anticipations. The only result of the ruinous contest of 1825 was to stimulate the introduction of machinery, which every day was increasing in its technical efficiency.

We have described the effects produced by the inventions upon the fortunes of the workers. The nature of the changes which took place in the structure of industry will be examined in a later chapter.[1]

The alterations brought about by the 'Industrial Revolu-

[1] Chapter Twelve.

tion' in the geographical distribution of the leading industries are noticed in connexion with those particularly affected.[1] A word, however, may be said here as to the general character of the movement and its broad consequences upon economic life. Although we speak of a migration of industry, it must not be interpreted to mean a movement of population *en masse* from the agricultural south to the industrial north. Contrary to what might be expected, the inhabitants of the southern counties did not diminish in numbers; indeed they increased though not at the same phenomenal rate. Before the advent of the railways which provided facilities for more distant journeys, the trend to manufacturing areas was in the nature of a rural exodus from adjacent shires. To this general statement the Irish immigrants are a conspicuous exception. One striking result of the migration of industry was the decay of country pursuits. We are so accustomed at the present day to associate manufactures with urban centres that we can scarcely conceive the extent to which they were formerly carried on in villages and townlets. In the eighteenth century probably every county in England had its local industries. The most widespread were textiles. Cottage spinning in particular was a valuable accessory to agriculture. It enabled the family of the farm labourer to eke out the miserable pittance earned by the principal bread-winner. This source of income, as was mentioned above, dried up when the introduction of machinery led to the general disuse of hand-spinning. In addition there was a great variety of dispersed trades including potteries, silk weaving, glove manufacture, straw-plaiting, paper-making and the rest. The general concentration in manufacturing districts extinguished many of these rural occupations. It thereby contributed to the decline of country life since the agricultural community was deprived of employments which had served to supplement its earnings in husbandry.

[1] Chapter Twelve.

Chapter Eight

THE REVOLUTION IN TRANSPORT

The 'Industrial Revolution' was bound up with a revolution in the system of transport internal as well as external. Without improved methods of communications it would have been impossible for manufacturers to take full advantage of machinery. Markets were needed at home and abroad to supply the raw materials and to absorb the finished products; and to create new markets and expand old ones was primarily a problem of easy and rapid intercourse either by land or sea. Nothing is more vital to a country than adequate means of moving from one place to another, for facilities in communications are the arteries of commerce. We must therefore observe the notable developments by which the system of transport was rendered adequate for the burden it was now being called upon to sustain.

We begin with the roads. At the present day all branches of the public service are carried on by qualified officials supported by compulsory taxes. In early times they were performed by the people themselves. A mediaeval citizen, for instance, was required to undertake police duties, repair the town walls, pave the streets, make bridges. In particular the function of maintaining the king's highway was considered to be the duty of the local community as a whole. In the middle of the sixteenth century when the manorial courts and monastic houses had shed their former responsibilities, Parliament stepped in and enacted the famous law (1555) enjoining every parish to appoint annually two unpaid surveyors while the labour, tools and horses were to be provided gratuitously by the inhabitants. An occupier of land was to furnish a cart with horses and men; and every other person was to work on the highways or send a substitute for four (afterwards six) days in the year. This system

of compulsory or 'statute' labour proved notoriously inefficient.[1] 'The days set aside for the performance of the statute labour,' commented an eighteenth-century writer voicing the general opinion, 'are considered as allotted to play and merriment.'

The condition of the roads gave rise to innumerable complaints. They were often little more than bridle paths and totally unsuited for wheeled traffic. Travellers, even judges on circuit, went on horseback; commodities of all kinds were borne by packhorses. In addition the highways were thronged with cattle, sheep and pigs, which kept the soft tracks in a permanently miry state. We have abundant evidence as to the 'execrable' character of English roads in the eighteenth century. Arthur Young branded the one road between Preston and Wigan in Lancashire in these words: 'I know not, in the whole range of language, terms sufficiently expressive to describe this infernal road. To look over a map and perceive that it is a principal one not only to some towns but even whole counties, one would naturally conclude it to be at least decent; but let me most seriously caution all travellers who may accidentally purpose to travel this terrible country to avoid it as they would the devil, for a thousand to one but they break their necks or their limbs by overthrows or breakings down. They will here meet with ruts which I actually measured four feet deep and floating with mud only from a wet summer; what, therefore, must it be after winter? The only mending it receives is the tumbling in some loose stones, which serve no other purpose but jolting a carriage in the most intolerable manner. These are not merely opinions but facts, for I actually passed three carts broken down in these eighteen miles of execrable memory.' Of the roads from London to Land's End it was said[2] that they were still 'what God left them after the Flood;' and of some of the main roads in Northamptonshire it was remarked[3] that 'the only way to get along in rainy weather

[1] It was abolished in 1835.
[2] In the eighteenth century.
[3] In the early nineteenth century.

was by swimming.' In the metropolis George II and his Queen spent the whole night in going from Kew Palace to St. James's Palace (a distance of eight miles) and once their coach was over-turned. In the middle of the eighteenth century it took the Edinburgh coach fourteen days, the Manchester coach and the York coach each four days, to reach London. The London-Oxford coach in a journey of fifty-five miles started at 7 a.m. and arrived on the evening of the following day. 'The increased speed with which everything connected with trade is transacted'—this was written in 1870—'is startling to men who remember the old times and ways. Time was, as men yet active in business well remember, when the Manchester merchant coming to Bradford [a distance of thirty-four miles] took three days for the outward and return journey in a post-chaise and pair of horses. The travellers by the Bradford and Manchester market express train would think chaos come again were they to return, if only for a month, to the habits of their immediate predecessors.'

The manifold consequences of this situation did not escape attention. It was recognized that defective communications hampered economic progress and rendered the carriage of commodities by land both difficult and costly. Henry Homer in 1767 wrote: 'The trade of the kingdom languished under these impediments. The natural produce of the country was with difficulty circulated to supply the necessities of those counties and trading towns which wanted [them].' The imperfections of the existing methods gave rise to the turnpike system which embodied the principle that every person, other than foot passengers, ought to contribute to the repair of roads in proportion to the use he made of them. The turnpike system became common in the eighteenth century, and ultimately there were over eleven hundred bodies of turnpike trustees—the trustees being persons of local standing authorized by act of parliament to construct and maintain a road and to levy tolls. They administered eventually more than twenty thousand miles; while outside their

sphere a vast extent of highways, several times as large, was still left under parish control. The turnpike roads made it feasible to use waggons in place of packhorses for the conveyance of goods; and Homer claimed that 'despatch which is the very life and soul of business becomes daily more attainable by the free circulation.'

Although the turnpike trusts were an improvement upon parish administration they suffered from numerous defects. The lack of centralized control resulted in a marked variation in the condition of the highways, which were too often confided to the care of incompetent officials or unscrupulous contractors. Road-making, in fact, was considered unworthy of the skill of engineers. For the sake of drainage the road was given a convex surface, but the convexity was sometimes so great that the sides are said to have sloped like the roof of a house; and the traffic fell on the centre which was speedily worn into ruts. The method of repairing was extremely primitive, since it was often nothing more than tumbling in large unbroken stones. Ultimately public opinion awoke to the fact that for centuries the methods of improving communications had been on radically wrong lines. Hitherto the idea had been to suit the traffic to the roads instead of suiting the roads to the traffic: hence the attempts of the legislature to regulate the character of the vehicles and the weight of their loads. No real progress was possible until highways were constructed and maintained on scientific principles. Development on these lines is associated with Telford one of the leading British engineers, and McAdam. The latter won a great reputation as a road repairer who sought to cover the surface with an impenetrable crust by spreading over it small broken stones uniform in size, which under the pressure of traffic would consolidate to form a smooth and hard surface.

The turnpike trusts were at the height of their prosperity in the thirties of the nineteenth century at the very moment when they were overtaken by 'the calamity of railways' and the consequent disappearance of the stage coaches, which

had furnished immense sums in tolls. This ruined the trusts, which could no longer afford to keep the roads in repair. To meet the situation Parliament authorized the justices of the peace to subsidize the turnpike roads out of the highway rates. The parish was thus constrained both to pay toll (as hitherto) for using the turnpike road and also to contribute towards the cost of repairing it. Public feeling was inflamed; and in South Wales in 1843 occurred the Rebecca Riots in which the turnpike gates were destroyed. Then in 1864 came a complete change of policy. A committee of the House of Commons resolved that the abolition of the turnpike trusts would be both beneficial and expedient; and Parliament adopted the policy of terminating them as their legal term expired. Year by year they disappeared—in 1871, when tolls were ended in London, there still survived 854 turnpike trusts in the provinces yet in 1887 only 15 remained—until at the end of the century they were extinct. An entirely different system of road management came into operation. It was supported not by tolls but by a highway rate; it was administered not by self-appointed bodies but by the local authorities (the act of 1888 transferred the main roads to the county councils); it employed not amateurs but professional surveyors; it used not unpaid labour but a permanent staff of hired workers.

The universal discontent with the condition of the roads inspired attempts to utilize as much as possible an alternative method of transport, namely, the rivers. Experience, however, showed that river navigation was attended by serious drawbacks: rivers suffered either from an excess or from a deficiency of water, their course was irregular, they were not evenly distributed throughout the kingdom. Hence in the second half of the eighteenth century artificial waterways were made. They had certain advantages over natural waterways: they did not suffer from floods or droughts and they could be built where they were wanted. In view of the

superiority of canals the delay in their construction requires some explanation. So long as corn and timber were the chief commodities for which carriage was needed, it did not seem profitable to embark upon expensive undertakings; moreover the necessary capital was not readily available in earlier times. In the eighteenth century the situation changed in both respects. The expansion of coal-mining and the iron industry made new methods of transport indispensable; and the accumulation of capital together with the advances provided by London bankers furnished the means for costly enterprises.

The era of canal navigation was inaugurated in 1761 when the duke of Bridgewater with James Brindley as engineer linked up the coal beds at Worsley with Manchester where the price of coal was halved, and subsequently linked up Manchester with Liverpool. Many other canals followed —among them the Grand Trunk connected Liverpool and Hull, that is, the west and east coasts. For several decades they enjoyed striking prosperity and their shares sometimes increased in value twenty-fold or more. None the less, although canals rendered a great service to the economic development of England, they were destined in their turn to be superseded by railways. The last canal was made about 1834, and from this time may be dated the period of their decline. The reasons for the decline are indicated in a report of a royal commission on canals (1909). 'Canals in this country were constructed upon no general scheme,' so that there was no national system of inland waterways, no through lines of communications, no uniform gauge. They are also inferior to railways in point of speed (a vital consideration where perishable goods are concerned); nor can they afford facilities for the extensive warehousing of materials. It should be observed that the decline was relative rather than absolute, since some canals continue to carry a considerable volume of merchandise. If canals and rivers in England occupy a very subordinate place in the system of transport as compared with the Continent, it must be

remembered that in our country their purpose is served by the coastwise traffic from port to port.

In their origin railways, like canals, were connected with the coal industry. When coal began to be consumed in increasing quantities, one obstacle to its production lay in the difficulty of getting the mineral from the pits to the river. The first attempt to deal with the situation was by the construction of wooden rails. This was the starting-point of the railway and it was known in the sixteenth century. To secure traction four-wheeled waggons were drawn by a horse, sometimes preceded by a man with a bundle of hay which he held just in front of the horse to stimulate it to greater exertions. The next stage in the evolution of the railway was the substitution of steam engines for horses. A stationary engine was placed at the top of a slope and drew up or controlled the descent of the loads. This was the beginning of steam-power on the railways. The third development occurred when the Surrey Iron Railway between Croydon and the River Thames, a 'public' railway not connected with either collieries or canal navigation, was built in 1801. The trucks were drawn by horses, mules or donkeys. The company did not own the trucks, the notion being that railways were to be treated like canals—that is, the company provided the route and the users supplied the waggons or barges and paid tolls. Then came the Stockton and Darlington Railway opened in 1825: it furnished waggons for goods traffic and coaches for passengers. At first horse-power was contemplated, but the company was persuaded by George Stephenson to employ locomotive engines though horses were also used.

George Stephenson, who was born in 1781, began as an engineman in a colliery—the engine being worked to pump water out of the mine. He early displayed his talents and constructed a locomotive at Killingworth colliery in 1814. Other inventors—including Richard Trevithick who contrived a steam carriage to travel on public roads (1802) and a

steam locomotive to travel on railroads (1804)—were seeking to solve the problem of utilizing the steam engine for purposes of locomotion. Nevertheless it was George Stephenson who by his perseverance overcame the mechanical difficulties: to him therefore must be assigned the credit of inaugurating the railway era. His great opportunity came with the formation of the Liverpool and Manchester Railway which was destined to give an immense stimulus to the growth of the railway system. The line was expressly conceived with the intention of competing with canal navigation owing to the discontent felt by traders with the waterway companies, which abused their monopoly by exorbitant charges and inefficient service. The directors agreed that 'horses were out of the question,' but it was an open issue whether the railways should have locomotives or stationary engines placed 'at intervals of a mile or two along the line to draw the trains from station to station by means of ropes.' Finally a prize of £500 was offered for a locomotive, which was won by George Stephenson with his 'Rocket.' The 'Rocket' attained a speed of twenty-nine miles an hour with an average of fourteen miles. After this trial (1829) the success of the railway was assured. The debate over the respective merits of haulage by horses, by stationary engines with cables and by locomotives lingered on for a few years: horse-power was still being used on some railways a quarter of a century later. None the less the practical problem of traction had been decided by the success of Stephenson's 'Rocket' in favour of locomotives. The Liverpool and Manchester Railway was opened in 1830. It was rapidly followed by the construction of railways in every direction.[1] Speculative finance in the thirties and forties bore fruit in a 'railway mania' with George Hudson—a linen draper who promoted the amalgamation of lines—cast for the role of 'railway king.' A prominent railway contractor was Thomas Brassey, whose experience of the economy of high

[1] The length of the railroad in the United Kingdom was 6,890 miles in 1851, and 22,078 in 1901.

wages added a crucial chapter to the works of the theoretical economists by demonstrating that low labour costs depended not on cheap wages but on efficiency.

The state[1] left the building of railways to private enterprise without attempting to devise a national scheme of communications consisting of great trunk lines in place of a series of disconnected lines serving particular localities. The opposition encountered by the railways was intense. 'It was declared that their formation would prevent cows grazing and hens laying. The poisoned air from the locomotives would kill birds. Houses would be burnt up by the fire from the engine-chimneys.' At the same time the consoling thought was that 'the weight of the locomotive would completely prevent its moving.' The *Quarterly Review* wrote in 1825: 'What can be more palpably absurd than the prospect held out of locomotives travelling twice as fast as stage coaches?' It was also asked: 'What was to become of coach-makers and harness-makers, coach-masters and coachmen, innkeepers, horse-breeders and horse-dealers?' As a consequence of this opposition inordinate expenditure was involved in acquiring the land from owners who extorted immense prices, as well as in securing parliamentary sanction. The total together with the cost of constructing the English railways exceeded sixty thousand pounds per mile or over four times the estimated amount expended in the United States.

The effects of the introduction of railways upon the economic life of the nation were manifold. The stimulus which they gave to trade was one of the main influences in the growth of industry. They enabled factories, wherever they were situated, to receive machinery, coal and raw materials at low rates. They provided facilities for circulating commodities throughout the land and easy access to the ports when goods were destined for foreign markets. Moreover the railway system furnished the means to concentrate the workers in any given place, bringing them from the

[1] For the policy of the state towards the railways, see Chapter Ten.

villages into the towns, and distributing them where they were most needed. And large industrial centres could not have developed in the north of England but for improvements in transport which allowed food to be brought to them quickly and regularly.

The working class gained in various ways. For one thing the railways came at an opportune moment since they helped to absorb the surplus labour in agriculture, and at the present day they afford employment on an extensive scale. For another thing they made labour in general more mobile by enabling the workers to move greater distances—an important factor in maintaining a standard wage. Then again the masses benefited by the cheapening of commodities consequent upon improved distribution, which put every district in a position to draw upon the whole kingdom instead of being restricted to the resources of the immediate neighbourhood. In particular the speed and low rates of railways rendered it possible to obtain fruit and vegetables at reasonable prices, and what were luxuries in the eighteenth century became almost necessaries. The railways, by creating opportunities for concentration in towns, must be held partially responsible for urban congestion and its corollary—slums; nevertheless in combination with motor omnibuses and cycles they have served in more recent decades to promote the development of suburbs and the gradual expansion of civic communities within wider territorial limits. Thus as a result of improved methods of transport, coupled with the diffusion of electrical power and the advantages of lower rents and rates, the pendulum is again swinging in the direction of a dispersion of industry. Lastly railways accelerated the decline of country life because they facilitated the rural exodus and the extinction of subsidiary industries, though they gave the producer of foodstuffs access to an extended market and therefore better prices than were prevalent in his own locality.

The story of the evolution of inland transport is not yet completed. Roads, rivers, canals, railways—and now again

roads have come successively into the foreground. The automobile has brought about a return to the roads, which are entering into serious competition with railways both for passenger and goods traffic. Once more the maintenance of the roads has become a matter of great public importance.

The revolution in methods of transport embraced external as well as internal communications— with consequences of immeasurable significance. The growth of industry depended in an overwhelming degree upon the world economy both as the source of raw materials and as the market for the absorption of manufactured goods; while supplies of grain and meat had to be carried overseas to feed the vast population that was springing up in the urban centres of England. In vivid contrast with the beneficial effects produced on industry, English agriculture lost its former monopoly of the homeland and was exposed to the full rigour of the competition of virgin soils.

The nineteenth century was an era of outstanding developments in British shipping, both as regards changes in the material with which vessels were constructed (the replacement of timber first by iron and then by steel), and the utilization of a new motive force (steam instead of wind). In the opening decades the stimulus for improvements in ocean navigation came from the rivalry between England and the United States, for there was a prospect that the latter would win supremacy in the world's carrying trade. At the end of the Napoleonic wars the mercantile marine of the United States was half that of England, but at the outbreak of the American Civil War it was only about one-quarter of a million tons less. The advantage enjoyed by the United States was that she could draw upon cheap and abundant supplies of home-grown timber for shipbuilding, whereas England had largely to import her materials. A presidential message to Congress expressed the conviction that American shipping would soon outstrip that of any other nation. However in economics as in war there are surprises, and

England began to forge ahead. After the Civil War the American people devoted themselves to opening up the interior of their country by an immense construction of railways. Furthermore English shipowners—deprived of protection and forced to depend upon their own efforts—threw themselves into the competitive struggle with greater ardour, and produced a better and faster ship. Above all the iron age in shipbuilding was already dawning, and it was destined to transfer to England the advantage not only in material but also in power. Iron began to displace timber as the material for building ships at a time when the United States had not developed her metallurgical and engineering industries; while steam had commenced to compete with wind.

The introduction of iron was due largely to the scarcity of timber: yet it was many years before iron ships superseded wooden ships although they were lighter in weight and therefore could carry larger cargoes, they were more durable, and there was no limit to their size. (Steel was to prove still lighter and cheaper to work.) The prejudice against iron ships died hard. 'Don't talk to me about ships of iron,' said the chief constructor of a naval dockyard, 'it is contrary to nature.' While a canal barge was built of iron in 1787 more than two decades elapsed before iron vessels were employed in river and canal navigation, and another decade before they made sea voyages. Progress continued to be slow. When the navigation acts were repealed in 1849 iron-built ships were few in number. Iron in fact was not extensively used for either steamers or sailing ships until the third quarter of the century; the date of the first iron battleship is 1860. Not all steamers were of iron—small wooden steamships were launched as late as 1875; not all sailing ships were of wood—there were iron sailing ships at least as early as 1830 and they became very numerous a generation later; there was also a period of composite building—a mixture of iron and wood. Yet scarcely had iron won the victory over wood as the material for shipbuilding when it was challenged by steel.

A steel ship was built in 1858, but the price of steel delayed its adoption and in the eighties iron ships greatly preponderated. In the next decade the triumph of steel over iron was virtually complete. One result of the substitution of metal for wood was the transference of the shipbuilding industry from the south of England (the River Thames) to the north-east coast and to Scotland (the Clyde).

England was the first country to apply successfully in navigation not only a new material but also a new motive force. A great drawback to the sailing ship was its dependence upon the wind which made it unreliable. Before steamships plied with passengers on the River Thames, travellers from Gravesend to London[1] were often called upon to embark in the middle of the night, and after being six or eight hours on the water might be compelled to land at a considerable distance from their destination. The use of steam in place of sails as a means of propulsion in shipping virtually began with the *Charlotte Dundas*, a wooden steamboat built in 1802, which plied on the Forth and Clyde Canal. This led Fulton (1807) in America to build a wooden steamboat with a British engine for service on the River Hudson. Iron and steam were wedded in 1820 when an iron steamer was made in England. Ocean navigation under steam was tried in 1819 in an attempt to cross the Atlantic from the American side, though steam only served as an auxiliary power. The next year witnessed an effort to steam across the Atlantic from the European side: no particulars have survived of the exploit. Nearly two decades later (1838) four ships crossed the Atlantic under steam,[2] one of them taking fifteen days; in the same year Cunard and his partners were given a contract by the British government for the conveyance of the North American mails by steam. The sailing ship did not succumb without a long struggle. When British shippers were deprived of protection in 1849 only 5 per cent. of the mercantile marine was under steam. Sail tonnage continued to increase until it attained its maximum in 1865, steam tonnage rising

[1] A distance of 22 miles by land.

[2] One was built of iron.

to 15 per cent. of the total. In the seventies sail tonnage declined while steam tonnage forged ahead; the latter had grown ten times as large as the former before the advent of the first world war.[1] Thus, as in industry, the adoption of steam-power was slow and protracted.

Steamers were used for the conveyance of mails and passengers. In order to take cargoes, fuel economy was necessary both to avoid high freights and save bunker space. Two alternatives were possible—either to build a ship that would carry a great number of passengers and large cargoes to compensate for the heavy cost of working the ship, or to devise a more economical marine engine. A solution was first attempted on the lines of a vessel of exceptional tonnage, the *Great Eastern*, but the experiment was not successful. The other solution was the achievement of John Elder of Glasgow, who constructed steamers fitted with compound engines which reduced the consumption of coal to one-half; eventually the turbine lowered it to about one-sixth. This made the steamer a commercial proposition because a saving in coal meant extra cargo. At the present day coal, as the marine fuel, is being replaced by oil which occupies less storage and is more economical to work. Another important development was the motor ship fitted with internal combustion engines, of which an increasing number is now being built.[2] In these improvements marine engineering kept pace with the new materials of ship construction. Finally new types of vessels have been designed for special purposes—the conveyance of frozen meat, fruit and dairy produce (the first cargo of frozen meat came from Australia in 1880); and the transport of oil in bulk (the first tanker was made in 1886).

As befitted a maritime power whose walls for a thousand

[1] The approximate sail and steam tonnage was—1840 (2⅜ million sail: 88,000 steam); 1850 (3⅓ m.: 170,000); 1860 (4⅘ m.: 450,000); 1870 (4½ m.: 1$\frac{1}{10}$ m.); 1880 (3⅝ m.: 2¾ m.); 1890 (3 m.: 5 m.); 1900 (2 m.: 7⅛ m.); 1910 (1$\frac{1}{10}$ m.: 10½ m.).

[2] The tonnage of motor vessels rose from 385,000 tons in 1924 to 2½ million tons in 1938.

years were made of wood when her coasts were guarded by ships of English oak, England from the middle of the nineteenth century enjoyed an undisputed primacy in the production of mechanically-propelled vessels. In the years preceding the first world war she was responsible for three-fifths of the world's output of mercantile marine. The most serious competitor, the United States, had withdrawn from the race for supremacy in order to concentrate her energies on the opening up of the vast hinterland that stretched from her Atlantic seaboard to the Pacific Ocean. The predominance achieved by our shipbuilding yards was due to a combination of factors—the efficiency of the iron industry, the skill and inventiveness of engineers, the abundance of cheap coal. Yet England might not have maintained her ascendancy in shipping when other countries developed their steel industry and oil began to displace coal, if she had not attained the leading position in world commerce and world carrying trade. This position was owing to an enlightened policy which opened her ports freely to the goods of other nations, which gave access to all ships without flag discrimination, which financed business transactions in all parts of the globe. The shipbuilders had viewed the repeal of the navigation acts with gloomy forebodings, but within sixty years the merchant fleet had more than trebled. It mustered 2½ million tons in 1815 (100 per cent. sail), 3½ millions in 1850 (95 per cent. sail), 11½ millions in 1910 (9 per cent. sail), and 11 millions in 1938 (4 per cent. sail, 73 per cent. steam, 23 per cent. motor).

A fresh chapter in the history of communications has been opened up within recent years by the development of air transport. We stand on the threshold of a new era with its illimitable possibilities for good—and also for evil.

Chapter Nine

THE AWAKENING OF LABOUR

A pregnant consequence of the great inventions was the rapid growth of a class-conscious proletariat. The awakening of the English masses was a portent of momentous significance. It made the nineteenth century the seed-time of many movements which are only coming to full maturity in our own day. Almost all the modern manifestations of labour activity—the political party, trade unionism in its present structure, the co-operative societies—are to be traced to the same era. It was also the formative epoch of socialist thought. The ideas which were conceived as to the claims of labour became later the basis of the socialist creed.

It is often asserted that the 'Industrial Revolution' created in England the proletarian class, that is, a class which possesses no property and lives entirely upon wages. Thus Engels, an early socialist writer and friend of Karl Marx, declared that 'the proletariat was called into existence by the introduction of machinery.' Actually a wage-earning class has existed in England for hundreds of years. The invention of machinery did not establish for the first time the relationship of employers and employed: this relationship was already the basis of the industrial system. Nor did it initiate the antagonism of capital and labour: this antagonism was already acute particularly in the eighteenth century. Why, then, in the nineteenth century did the English working class become so keenly perceptive of its separate identity as a class and so determined to be master of its own destiny? The explanation is to be found in the effects produced by the inventions on the psychology of labour.

To begin with, the adoption of machinery brought in its train the factory system; and the concentration of great masses of workmen under a single roof quickened their sense

of corporate interests. Engels has described the influence of factory and urban life in stimulating self-consciousness among working men. 'The workers,' he wrote, 'begin to feel as a class, as a whole; they begin to perceive that, though feeble as individuals, they form a power united; their separation from the bourgeoisie, the development of views peculiar to the workers and corresponding to their position in life, is fostered; the consciousness of oppression awakens, and the workers attain social and political importance. The great cities are the birthplaces of labour movements; in them the workers first began to reflect upon their own condition and to struggle against it; in them the opposition between proletariat and bourgeoisie first made itself manifest. Without the great cities and their forcing influence upon the popular intelligence the working class would be far less advanced than it is.' In the next place the 'Industrial Revolution' appeared to intensify the immemorial contrast between riches and poverty. Alike in industry and agriculture large-scale production challenged small-scale production, and as a result economic power was vested in fewer hands. Capital accumulated rapidly yet at the same time intense social misery prevailed. The situation seemed paradoxical. The spectacle of great wealth poured out by machinery, sharply accentuated as it was by striking inequalities in its distribution, provoked a fierce spirit of resentment and awakened the dormant feeling of class antagonism.

The ultimate consequences of the inventions have undoubtedly been, on the whole, beneficial. None the less progress has been achieved at a price, and a well-balanced view of the 'Industrial Revolution' will take into account both the price which has been paid and the gain which has accrued. Contemporaries however were, not unnaturally, mostly alive to the evils of the new industrial system; and in their eyes its disadvantages outweighed its merits. It was a common view that, bad as was American slavery, 'the white slavery in the manufactories of England was far worse.' Robert Owen asserted that the effect of all the 'splendid

improvements' had 'hitherto been to demoralize society through the misapplication of the new wealth created.' Man, he cried, 'sees all around him hurrying forward to acquire individual wealth regardless of him, his comforts, his wants or even his sufferings.' We must indicate the nature of the evils from which the workers suffered, for they nourished the social unrest which found expression in a militant labour movement.

The first was the low price of labour. 'Half a million hand-loom weavers,' wrote Carlyle, 'working fifteen hours a day in perpetual inability to procure thereby enough of the coarsest food; English farm labourers at nine shillings and at seven shillings a week.' 'A great mass of our unskilled labourers,' observed Francis Place the devoted champion of labour, 'and a very considerable number of our skilled labourers are in poverty if not in actual misery. They live amongst others who are better off than themselves and they cannot understand why there should be so great a difference. To men thus circumstanced any, the most absurd, scheme which promises relief is eagerly seized and earnestly adhered to.' It was from the ranks of famished hand-loom weavers and others steeped in poverty that insurrectionary chartism recruited its most fiery supporters. Nevertheless the backbone of the militant labour movement was not the half-starved weaver, carrying on a hopeless fight against machinery, but the relatively prosperous factory operative. It often excited surprise that the best-paid workmen complained the most. 'No doubt of it!' exclaims Carlyle. 'The best-paid workmen are they alone that can so complain! How shall he, the hand-loom weaver who in the day that is passing over him has to find food for the day, strike work? If he strike work he starves within the week. He is past complaint!' The mill hands were better off yet (as Carlyle recognized) wages alone 'are no index of well-being to the working man.' Insecurity, in other words liability to unemployment, is even more demoralizing than poverty; and insecurity was the lot of the factory operatives. 'Their trade,' says Carlyle,

'now in plethoric prosperity, anon extenuated into inanition and short-time, is of the nature of gambling; they live by it like gamblers now in luxurious superfluity now in starvation. Black mutinous discontent devours them; simply the miserablest feeling that can inhabit the heart of man. English commerce with its world-wide convulsive fluctuations makes all life a bewilderment; sobriety, steadfastness, peaceable continuance, the first blessings of man, are not theirs.'

Poverty was the source of other evils. William Lovett, the chartist leader, tells of a visit which he paid to Spitalfields:[1] 'In whole streets that we visited we found nothing worthy of the name of bed, bedding or furniture; a little straw, a few shavings, a few rags in a corner formed their beds—a broken chair, stool or old butter-barrel their seats —and a saucepan or cup or two their only cooking and drinking utensils. Their unpaved yards and filthy courts, and the want of drainage and cleansing, rendered their houses hotbeds of disease; so that fever combined with hunger was committing great ravages among them.' And these conditions were general throughout the industrial north, for the official inquiries of the forties into the state of the towns gave an appalling account of the housing of the poor. A natural corollary of the social malaise was that intemperance, with its baneful consequences, was rife. We may quote a description from a contemporary writer, Lloyd Jones. 'Drink was the mainspring of enjoyment. When Saturday evening came indulgences began which continued till Sunday evening. Fiddlers were to be heard on all sides, and limp-looking men and pale-faced women thronged the public-houses and reeled and jigged till they were turned, drunk and riotous, into the streets at most unseasonable hours. On the Sunday morning the public-houses were again thronged that the thirst, following the indulgence of the night, might be quenched. When Church hour approached, however, the churchwardens with long staves tipped with silver sallied

[1] In London.

forth, and when possible seized all the drunken and unkempt upon whom they could lay their hands, and these being carefully lodged in a pew provided for them were left there to enjoy the sermon, whilst their captors usually adjourned to some tavern near at hand for the purpose of rewarding themselves with a glass or two for the important services they had rendered to morality and religion. In fact sullen silent work alternated with noisy drunken riot.' Such was some of the material out of which labour leaders strove to build up a stable and coherent labour movement.

Apart from the degradation produced by poverty, insecurity of employment, bad housing and intemperance, there were all the unsettling effects associated with a period of transition. In the eyes of contemporaries the foundations of society seemed in process of dissolution. The old social landmarks were being submerged in a torrent of industrialism; new classes were being formed and new relationships were being established between employers and employed. Three features in particular should be observed. The first was the complete collapse of the old industrial code instituted by the state for the 'well-ordering' of the working class—with the result that the latter was driven to depend upon its own efforts. The second was the increased importance of capital due to the installation of machinery, coupled with diminished opportunities for a wage-earner to attain mastership and economic independence. So long as the artisan had some prospect of improving his status, a permanent and efficient labour movement was impracticable. The leaders of the working men, with greater intelligence and capacity than their fellows, were constantly absorbed into the ranks of the employers. But the use of machinery required an amount of capital which the mass of operatives could never hope to acquire; and so the working class became more consolidated, more rigidly defined, and more conscious of a separate identity and of separate class interests. The third development was the growth of a vast industrial population employed in factories, workshops and mines, which had behind

it no corporate traditions to give it coherence and stability, and which was composed of the most diverse elements—handicraftsmen who had inherited a pride in their skill and semi-independence, agricultural labourers divorced from the steadying influences of country life, Irish immigrants accustomed to an inferior standard of existence. All these elements were mingled together in the large towns, each reacting on the other, creating intense social confusion, a sense of chaos and instability, out of which emerged a militant labour movement seeking blindly to accomplish far-reaching and even revolutionary designs. The moderating influence of education was absent. There was no compulsory school attendance. A number of day-schools were available for the children of working men but they were extremely unsatisfactory, and the teachers often lacked even elementary knowledge. In some towns mechanics' institutes afforded adults an opportunity for hearing lectures, which appear however to have been sometimes largely of a propagandist character.

The interplay of all these varied influences was responsible for a deep social cleavage; and the nation was arrayed into two opposing camps, employers and employed, each looking on the other as an enemy. Or rather one should say that two nations warred together within the confines of a single state. The 'complete separation of feeling between masters and men,' which began to arouse grave misgivings from the early decades of the nineteenth century, was partially due to the altered conditions of industrial life. Owing to large-scale production the masters no longer came into contact with their men, and this neutralized the possibility of friendly feeling between them. An enlightened employer of labour and a famous advocate of arbitration and conciliation, Mundella, has described the changed situation in these words: 'It is this hostile feeling between masters and men that is the cause of the mischief. In the old time when I was an apprentice, my master knew every man that he employed and knew his circumstances. When his wife was sick he helped him or lent him money or helped

to send his boys to school. Now we employ thousands; we do not know their faces; they are "hands" to us, they are not men; there is no sort of mutual sympathy, and that is the top and bottom of all the mischief.' While there still remained anything of a patriarchal relationship between masters and men, there also survived a sentimental bond; but when they grew estranged, and the bond between them became purely a cash nexus, a clash was inevitable.

The conflict of capital and labour, though not a new phenomenon, was the dominating fact of industrial life throughout the nineteenth century. On the side of the men their leaders insisted that the interests of employers and workmen were irreconcilable. When Allan, secretary of the Amalgamated Society of Engineers, was asked by the royal commission of 1867 the question: 'Is it not the interest of the employer and employed to work together?' he replied: 'There I differ. Every day of the week I hear that the interests are identical. I scarcely see how that can be, while we are in a state of society which recognizes the principle of buying in the cheapest and selling in the dearest market. It is their interest to get the labour done at as low a rate as they possibly can, and it is ours to get as high a rate of wages as possible, and you never can reconcile those two things.' The doctrine that labour is a commodity to be bought and sold like other commodities was fiercely resented. 'Employers,' complained the author of *Tom Brown's School Days*, 'treated the labour of their men, which was in fact the lives of their men, on the same principles as those on which they treated a dead commodity. They most rigorously applied to it the same law of supply and demand as they applied to any other commodity, thereby putting the living man and inanimate things on the same footing.' For peace in industry, declared the spokesman of the miners, Macdonald, it is necessary that 'employers cease to treat their men as so much material in the market but treat them like men.'

On the side of the employers the feeling of suspicion and dislike shown by the men was largely reciprocated. Many of

the early capitalists were sprung from the most ignorant section of the population, and they often abused their power. 'The old aristocracy of birth,' says Robert Owen, 'as I recollect them in my early days were in many respects superior to the money-making and money-seeking aristocracy of modern times.' For a long while employers resisted all proposals for arbitration with their men, because they considered that it would degrade and humiliate them to meet their workmen around a common board. Mundella declared that in some industrial centres he had heard the masters express their private opinions freely. 'One could hardly believe that they could be speaking of the same race when speaking of their workmen. The feeling that is cherished by some employers towards working men is so bad that it is the foundation of many of the strikes that happen.'

In these circumstances it is not surprising to find the conviction widespread that England was on the verge of a social revolution. This conviction explains the intense distrust exhibited by the governing class during the first half of the nineteenth century towards the aspirations of labour, and the adoption of a policy of intimidation and repression. And not until this conviction had died a natural death were the workers admitted to a share of political power. Here is one prophecy of an impending social catastrophe uttered by an acute if biassed observer. 'The middle class,' wrote Engels in 1844, 'dwells upon a soil that is honeycombed, the speedy collapse of which is as certain as a mathematical demonstration. The deep wrath of the whole working class [must] before too long a time goes by break out into a revolution in comparison with which the French Revolution will prove to have been child's play.'

What then was the solution of the social problem? Such was the question which agitated men's minds during the generation which followed the peace of 1815. Victorian optimism, the complacent feeling that everything was well with England, is a characteristic of the third quarter of the nineteenth century. In earlier decades there was ample recog-

nition of the disease in the body politic, and the utmost variety of remedies was confidently propounded as the panaceas of all social ills. 'The poor patient,' Carlyle wrote, 'tossing from side to side' complained now of this now of that, while the physicians failed to agree among themselves. Let us observe the remedies that at one time or another engaged the attention of social reformers. They may be grouped under five heads: those proposed by the manufacturers, by the political economists, by the currency theorists, by the tory democrats, and finally those which found favour with the workers themselves.

The remedy of the manufacturers was free trade: repeal the corn laws, invite the whole world to exchange its grain for English products, and poverty will disappear. It is a curious fact that the proposal to repeal the corn laws, which meant a reduction in the price of bread, was strenuously resisted by a section of the working class.[1] The remedy of the political economists was Malthusianism. Human misery, they taught, was not the result of human injustice; it was due to the pressure of population upon the means of subsistence. Over-population was the prime cause of the economic malady; the supply of labourers must therefore be diminished, then 'the demand and the remuneration will increase.' This was to be done among other ways by a more stringent administration of the poor law and by emigration. In glowing colours Carlyle unfolded the great solution of the social problem—emigration. He depicted a world unpeopled, 'where Canadian forests stand unfelled, boundless plains and prairies unbroken with the plough; on the west and on the east green desert spaces never yet made white with corn; and to the overcrowded little western nook of Europe our terrestial planet, nine-tenths of it yet vacant or tenanted by nomads, is still crying: Come and till me, come and reap me! And in an England with wealth and means for moving such as no nation ever before had.' But to Malthusian teaching and its implications the workers turned a deaf ear.

[1] See Chapter Eleven.

Robert Owen, from whom all the labour movements of the age drew much of their inspiration, taught them to treat lightly its terrors. 'The reverse of the Malthusian doctrine,' he proclaimed, 'is true. Mankind are able to produce food in a geometrical ratio to their increase in number.' The third remedy, which was widely canvassed among a section of reformers, was the amendment of the currency. Society suffered, it was argued, from a shortage of gold to serve as the medium of exchange. Manufacturers were hampered because they could not obtain loans; workmen were unemployed or unfairly remunerated because they could not exchange their labour for money. In a word, shortage of currency meant economic stagnation; and conversely 'an increase of the currency quickens industry.' Thomas Attwood, the son of a banker and a prominent politician, proposed the creation of paper money whereby production could be made to balance effective demand; and Owen advocated the issue of labour notes.

The fourth remedy was that of the tory democrats, men like Michael Sadler, Richard Oastler 'the factory king,' Samuel Coleridge and Robert Southey. A passage from Coleridge's *Lay Sermons* will serve to illustrate their standpoint. 'Our manufacturers must consent to regulations; our gentry must concern themselves in the education as well as in the instruction of their natural clients and dependents; must regard their estates as secured indeed from all human interferences by every principle of law and policy, but yet as offices of trust with duties to be performed in the sight of God and their country.' The tory democrat based his philosophy upon the conservation of the existing fabric of society with its social gradations and economic distinctions of rich and poor, employers and employed; but he postulated also the principle of duties as the correlative of rights, the obligations of wealth and power as the justification of their privileges. Hence factory reform and the relief of poverty were the main planks in the social platform of tory democracy. To the mass of the workers the philosophy failed to

commend itself because it ignored their demand for social and political equality. This explains also the failure of Disraeli's own vision of a 'Young England' party: it was incompatible with the wave of democratic sentiment which was beginning gradually to infiltrate all sections of English society.

The remedies which found most favour with the workers themselves were of three kinds. One was socialism—not state socialism but voluntary co-operation. State socialism means that the state owns and controls the instruments of production. Voluntary co-operation means that the workers organized in groups are to manage their own economic affairs. The second was parliamentary reform on the lines demanded by the chartists. The third was collective bargaining, that is, trade unionism. These proposed remedies represented attempts to solve the social problem from three different angles. The first (socialism) sought to dispense with the capitalist in industry: the second (chartism) endeavoured to capture the governmental machinery, and by the aid of political power establish economic ascendancy: and the third (trade unionism) was a recognition that the capitalist played a necessary part in production, or at any rate was too strong to be dislodged, and therefore the best thing to do was to strike a bargain with him. There was thus an acute division among the spokesmen of the working class as to the proper cure for the social disease; and the clash of the different schools of thought proved a fatal handicap in the efforts to establish a common front.

We may now consider more in detail the first two remedies propounded by labour leaders—socialism and chartism.[1]

England, and not the Continent, is the birthplace of modern socialism. The cardinal doctrines of the socialist creed—that labour creates wealth, and that profits are the 'surplus value' abstracted from labour—were first given to

[1] For the third, trade unionism, see Chapter Fourteen.

the world not by Karl Marx but by a small body of British thinkers in the second and third decades of the nineteenth century. From those writers Karl Marx drew his inspiration; and when—owing to an interval of economic prosperity—the memory of the early English socialists passed into oblivion, the Continent subsequently gave back to England the socialist doctrines of which this country was the original source and fountain-head. It was natural that England should be the birthplace of modern socialism. The latter was a reaction against the abuses of an unregulated industrialism, and these appeared earlier here than on the Continent where the adoption of machinery was delayed. The protest against abuses assumed two forms. Among the moderate elements it was confined to a demand for remedial legislation. Capitalism had revealed itself a potent force for good in so far as it promoted the increase of wealth; but also a potent force for evil in so far as it was left to exploit the industrial masses unshackled by any kind of control. Accordingly the moderate elements sought to limit the power of capitalism by factory reform, trade unionism and the institution of co-operative stores. But the more extreme elements endeavoured to eliminate the capitalist altogether, that is, they wanted to abolish completely the private ownership of capital.

Not only was modern socialism the product of British conditions: it was also in form and structure the creation of British minds. It was hewn by British hands out of materials supplied unconsciously by great British thinkers. Ricardo, whose authority in political economy was unquestioned—in line with John Locke and Adam Smith—had declared that labour was the cause of value; and although he did not mean what the early socialist writers thought he meant, his statement was eagerly seized upon and adopted by them as the basis of their theories. In their hands the doctrine that labour alone creates wealth received the narrowest interpretation because labour was regarded as purely manual or wage labour. The idea was popularly expressed thus:

'Wages should form the price of goods;
Yes, wages should be all;
Then we who work to make the goods,
Should justly have them all;
But if the price be made of rent,
Tithes, taxes, profits, all;
Then we who work to make the goods,
Shall have—just none at all.'

The theory of 'surplus value', which became the bedrock of Marxian socialism, was foreshadowed in the conception that the capitalist appropriated—in the shape of profits and rent—a large portion of the labourer's natural reward.

The socialists regarded competition as the source of all evil; and their remedy was co-operation in place of competition, associated enterprise instead of individualism. As the 'Christian socialists' afterwards expressed it: 'The watchword of the socialist is co-operation; the watchword of the anti-socialist is competition. Anyone who recognizes the principle of co-operation as a stronger and truer principle than that of competition has a right to the honour or the disgrace of being called a socialist.' In this sense of the term the father of English socialism was Robert Owen.

The career of Robert Owen passed through two main phases. In the first he appears as the successful manufacturer, the model employer devoted to the welfare of his work-people, the ardent advocate of factory legislation, the pioneer of popular education—he was the founder of the first infant school in Great Britain—and the exponent of an enlightened philosophy. In the second he emerges as the apostle of a new social order based on the principle that the character of the individual is formed by his environment, and as the prophet of a new creed of co-operation in lieu of competition. His influence upon the evolution of the English labour movement cannot be over-estimated. The Radical poet, Ebenezer Elliot, wrote: 'You came among us—a rich man among the poor—and did not call us rabble. This was a

phenomenon new to us.' It was not alone the sympathy that Owen exhibited to working men, alike in his creation of a model establishment at New Lanark which attracted world-wide attention, in his advocacy of factory reform, and in his schemes for the relief of the unemployed. It was also the fact that his teachings opened up before their eyes the vista of a better world and inspired them to resist the gloomy philosophy which saw salvation for the working class only in emigration and restriction of population. His passionate belief in the possibility of human progress, and in the attainment of a millenial state upon earth by the reconstruction of society on rational lines, profoundly influenced the thought and outlook of his countrymen; and even the doubts which have been cast upon the idea of progress have failed to eradicate human faith in its reality. He rendered, in any event, an inestimable service by inculcating the supreme lesson that human betterment is not beyond the scope of human control; and one solid—if unlooked-for—fruit of his career remains to the present day in the consumers' co-operative movement.

Owen assumed as an axiom that the state of society created in England by the 'Industrial Revolution' was utterly bad. He complained that industry and commerce were regarded purely as a source of wealth without regard to their political and moral reactions. Under a 'thoroughly selfish system,' as he termed it, there could be no true civilization. No permanent and substantial improvement in society was possible until the adoption of 'a superior mode of forming character and creating wealth.' Accordingly it was necessary to create 'entirely new surroundings' for the human race. This result was to be attained by life in a co-operative community, in which capitalism and the pursuit of individual competition were to be superseded by associated enterprise.

Many generous minds from antiquity down to our own era have conceived visions of an ideal commonwealth. Owen was not the first, nor has he been the last, to dream

of a golden age for mankind. Yet in one respect he was more fortunate than other visionaries, in that several attempts were made in his own lifetime to clothe his ideas with the flesh and blood of reality. There were four main experiments at community-building. One was in Scotland; another in Ireland; the third in America where the prophet of communism himself tested the practicability of his own theories at New Harmony in Indiana (1825–28); the fourth and last in England at Queenwood in Hampshire (1839–45). One and all these Utopian projects failed. They imposed too great a strain upon human nature, and the old leaven of individualism proved too strong.

The early socialist movement bequeathed to the world as its unexpected legacy the consumers' co-operative movement. The community experiments had been conducted by moneyed men who had become converts to the new social system, so that the socialist programme appeared to depend for success upon the aid of wealthy philanthropists. But Owen's theories of society had fired the imagination of the working class, and a popular agitation sprang up spontaneously all over the country. It was this development which assured Robert Owen an enduring place in the history of the nineteenth century. If his career had resulted in nothing more than visionary projects for social regeneration and half-baked schemes for community-building, he would be remembered to-day as a dreamer who beyond his achievements at New Lanark had left behind him only a record of failure. In reality he gave birth, all unconsciously, to one of the most influential forces in modern industrial life.

The starting-point of the consumers' co-operative movement was the conviction of the masses that they must not wait, for an improvement in their condition, upon the willingness of the rich to provide capital for socialist experiments. They must work out their own salvation with their own hands and their own sacrifices, and gain thereby the additional recompense of being masters of their own destiny.

Inspired with this idea, groups of artisans began to form co-operative societies in order to procure funds for a community in which they could escape the thraldom of a capitalist regime. The funds were to be raised partly by subscriptions, partly by purchasing commodities for resale to their members and accumulating the profits. When Owen returned from America he found the movement in active operation—at one time the number of societies exceeded seven hundred—but the sanguine predictions of their promoters were not fulfilled and the associations of the thirties lapsed. Nevertheless the co-operative enthusiasm evoked by Owen's teachings bore permanent fruit, for a decade later the secret of success was discovered. In 1844 a general store was started at Rochdale with a capital of twenty-eight pounds by a body of co-operators who called themselves the 'Pioneers' and were only twenty-eight in number. The distinctive feature for which the 'Pioneers' became famous, although they were not the first society to adopt it, was the distribution of profits not among shareholders or employees but among members in proportion to the amount of their purchases. This avoided the mistake made by the old stores, which failed to draw custom because they had no special attraction for the public since the profits went to capital. The Rochdale plan was universally adopted by co-operative retail stores, which now number over a thousand (with a membership running into several millions)[1] and are linked up with two co-operative wholesale societies which also engage in production. The co-operative movement of the present day has diverged widely from the ideals contemplated by the co-operative enthusiasts of the thirties; and it may be questioned whether Owen himself would not disown the parentage of his offspring. Apart from the fact that the community ideal is now generally discredited, the co-operative store foreshadows at best a consumers' paradise. The labour problem is not solved because the relations of employers and employees remain.

[1] In 1938 the number of co-operative retail societies in Great Britain was 1,124, and the membership exceeded eight millions.

Nor have these relations proved invariably amicable, though it is true that co-operators have been in many respects model employers.

Chartism was the first political expression of working class consciousness. It was a protest against the subordination of the masses—against a regime in which political power was vested in the hands of landlords and capitalists. Francis Place described it as 'a new feature in society produced by the increased intelligence of the working people.' John Stuart Mill termed it 'the first open separation of interest, feeling and opinion between the labouring portion of the commonwealth and all above them.' Chartism was thus essentially a class struggle, seeking the realization of its aims without the co-operation of other sections of the community. This is the broad historical significance of the chartist movement; and as the course of events was to demonstrate it was a movement born out of time. The workers lacked political sobriety, training and discipline, they lacked experienced and level-headed leaders, and they lacked a stable and coherent organization—all of which give to the modern labour movement its strength and solidity. After the collapse of chartism the working class abandoned for half a century the attempt to constitute itself a separate political party; and its leaders gave their allegiance to the principles of liberalism. Throughout the nineteenth century the middle class remained securely enthroned in its seat of power. At the end of the century political labour was resurrected as an independent entity; and this fresh development—pregnant with momentous economic consequences—is gradually unfolding itself before our eyes.

The 'Charter' itself was a political document. Its famous 'six points' were all political: manhood suffrage, equal electoral districts, vote by ballot, annual parliaments, abolition of the property qualification for parliament, and payment of members. The 'Charter' sprang from the disillusionment produced by the Reform Act of 1832, when the middle class

obtained complete enfranchisement. The victory had been achieved with the co-operation of the mass of the working class, whose support was given in the expectation that the Reform Bill would be a 'stepping stone' to its own political claims. The government's determination to treat the Reform Act as a final measure, and not as an instalment, shattered the alliance between the middle class and the working class. In the eyes of the latter the change had only effected a transfer of power from one domineering faction to another. In consequence working men became utterly estranged; and their conviction that they had been used as tools to gain the franchise for others led them to establish a purely working class movement, in which they proceeded to challenge the newly-won political ascendancy of the middle class.

Nevertheless the driving force behind chartism, and the prime cause of the unrest which gave the movement its stern reality and threatened to bring England to the verge of revolution, lay in social rather than political grievances. Chartism was not in its essence a demand for electoral emancipation; but, as one of its most prominent leaders declared, it was 'a knife and fork question.' The acquisition of the franchise was not intended as an end in itself—only as the means to an end. Indeed it was the consciousness of the ulterior aims of the chartist movement that inspired the resistance to it. Not the 'Charter' but the fear of what lay behind it raised overpowering anxiety in the minds of the middle class. Macaulay, for instance, affirmed that he agreed with all the 'six points' except manhood suffrage, which he thought would imperil the security of property. This explains the paradox of chartism, namely, that the demands of the 'Charter' began to be conceded as soon as the chartist movement itself was extinct. Once the dread of a social revolution was removed, the opposition to political changes died away; and when in 1867 the working men in towns were enfranchised, the 'leap in the dark' failed to excite any serious apprehension.

The social programme of the chartists, unlike their political programme, was never stated with precision. There was nothing to correspond on the social side of the movement to the 'six points.' The reason doubtless was that, while they were united on the political platform, they were completely divided on the social platform. They were acutely conscious of the wretched condition of the people yet they produced no constructive platform. Carlyle could therefore with correctness define chartism to mean 'the bitter discontent of the working class,' for in its social aspect it was little more than a vague expression of intense unrest.

None the less some of the chartist leaders did commit themselves to concrete proposals, though they were mutually contradictory and destructive. In the ferment of ideas two main schools of thought emerged. The first was reactionary. It sought inspiration in a past which it idealized as the golden age of the English people: its cry was 'back to the land.' The agrarian projects were a protest against the economic order called into existence by machinery, which had developed the factory system and concentrated large bodies of operatives amidst unhealthy surroundings. The second school accepted as inevitable the changes which were taking place, and did not seek to stem the tide of industrialism that was fast submerging the old landmarks. Men like William Lovett saw the salvation of the working class not in a return to an idealized past but in co-operation, and above all in the education and moral up-lifting of the masses. Ultimately the conflict between the two opposing factions resolved itself into a conflict of ideas between those who treated the social problem as purely a bread and butter question, and those who put before themselves also a moral ideal. The nobler conception was expressed by Lovett in words which are still pregnant with meaning: 'Unless the social and political superstructure were based upon the intelligence and morality of the people, they would only have exchanged despotism for despotism and one set of oppressors for another.'

Apart from the main cleavage of opinion in the chartist

ranks, individual chartists cherished the most diverse aims. The movement, in fact, was a rallying-point for all those who had social grievances or panaceas for social ills. The assailants of the new poor law like Stephens, the opponents of the orthodox currency doctrines like Attwood, the supporters of voluntary co-operation like the 'Owenites,' the champions of factory legislation, the fiscal reformers who wanted to reduce the amount and shift the incidence of taxation—all these found a common meeting ground in the fight for political power. The disunion among the chartists extended to methods as well as to aims. The advocates of 'moral force' sought to pursue the path of orderly and constitutional agitation; they wished to achieve their objects through the spread of education and the growth of public sentiment. The advocates of 'physical force' believed in swift and dramatic strokes of action; they talked of armed insurrection; and their incendiary appeals to violence were responsible for serious outbreaks. The movement also was distracted by divided counsels and embittered personalities. Rival partisans, severed by antipathies of temperament and policy, created a schism in the party which no compromise could bridge.

In addition to the diversity of aims, methods and leadership which split the movement in twain, there was a fatal cleavage in the ranks of labour itself. The north and the south appeared, in an industrial sense, two different worlds. The workmen of the south, and more particularly London, represented the old craft traditions. They were skilled artisans, organized in unions which had maintained their privilege of exclusive membership and successfully resisted social degradation. A higher standard of life and experience of disciplined agitation, coupled with unique opportunities for instruction and discussion, gave them a superior character that stamped them as a kind of aristocracy of labour. In the north, on the other hand, a vast population had sprung into existence created by the new industrialism; and its turbulent and untamed character was the inevitable product of the harsh forces which shaped it. Uneducated, demoralized by

excessive hours of toil, living amidst appalling insanitary conditions, and stung by a sense of injustice at the tyranny of the economic system, the miners and famished weavers of the north presented a seething mass of inflammable material which only needed the spark of fiery eloquence to set it ablaze. These were the men who made pikes, and learnt to drill, and attended torch-light processions, and awaited eagerly the call to arms.

The root cause of the failure of chartism was the progress of the working class, which relaxed the leaders' hold upon the people. In the fifties and sixties England emerged from the tribulations which had darkened her horizon; and as the sources from which the chartist agitation drew its chief strength—industrial depression and social discontent—dried up, those who had been attracted to the movement by specific grievances fell away from the chartist ranks. The political apathy of the workers, and their recognition of the middle class as their leaders and monitors, did not imply that they had abandoned all hope of raising their condition, or that they had sunk into a fatalistic acceptance of the existing regime. What really happened was that their energies were diverted into non-political channels; and they now sought to improve their position by means of two typically working class institutions, namely, trade unionism and co-operation. Thomas Cooper, a chartist leader, draws an effective contrast between the Lancashire workers of the chartist era and a generation later: 'In our old chartist times, it is true, Lancashire working men were in rags by thousands; and many of them often lacked food. But their intelligence was demonstrated wherever you went. You would see them in groups discussing the great doctrine of political justice—that every grown-up sane man ought to have a vote in the election of the men to make the laws by which he was to be governed; or they were in earnest dispute respecting the teachings of socialism. Now you will see no such groups in Lancashire. But you will hear well-dressed working men talking, as they walk with their hands in their pockets, of

"co-ops" [co-operative stores] and their shares in them or in building societies.' The age of poverty and a keen interest in politics yielded to an age of prosperity and a keen interest in economics. Thus chartism declined—partly because Parliament now showed greater readiness to remedy the social grievances of the working class, thereby cutting the ground from under the feet of the chartist agitator; and partly because the wage-earners found another outlet for their energies in directions which seemed to promise more immediate and tangible fruits for their exertions and sacrifices.

In studying the history of the labour movement in the nineteenth century we are struck by an acute difference between the earlier and later decades. In the first phase—which ends in the middle of the century—labour appears as an insurgent force, full of revolutionary fervour, inflamed with a passionate sense of injustice and economic wrong. This is the epoch of England's social history, of which the burning passion becomes articulate in the pages of Carlyle. It is the epoch of revolutionary socialism, of communist experiments, of militant trade unionism, and of midnight assemblies of insurrectionary chartists armed with pikes and muskets: an epoch of grave unrest when contemporaries believed the whole frame of civil society 'to be breaking up.' The later phase—which covers the third quarter of the nineteenth century—presents a remarkable contrast. The revolutionary excitement had died down; labour had become the ally, or rather the handmaid, of liberalism; its feet were being trained to walk in constitutional paths; and Parliament, discarding the fashionable philosophy of an earlier generation—the 'dismal science' with its doctrines of *laissez-faire* and restriction of population—now displayed a greater willingness to make concessions to labour. The explanation of the contrast lies in the altered character of the general economic situation. In the opening decades of the century the working class suffered from all the evils associated with

the industrial and agrarian changes, aggravated as they were by the long war with France. In the fifties and sixties the country entered upon an era of great prosperity due, among other factors, to the development of railways, the adoption of free trade and the increased output of gold. During these years of plenty working men turned away from the alluring vision of a socialist commonwealth. They devoted their efforts to building up on sound and moderate lines a stable and permanent trade union organization, and to covering the country with a network of co-operative stores. And when years of economic distress once more succeeded the years of plenty, socialist teachings again found a fruitful soil and the labour movement in England was reborn.[1]

[1] Socialism in England revived in the eighties—at a time of falling prices and trade depression—under the inspiration of Karl Marx.

Chapter Ten

THE REACTION FROM LAISSEZ-FAIRE

It has been shown in a previous chapter how the triumph of *laissez-faire* came in the eighteenth and not, as is commonly supposed, in the nineteenth century. It was the novel situation created by the introduction of machinery and the growth of the factory system that was responsible for an epoch-making departure in the national approach to economic problems. At first the state assumed an attitude of Olympian detachment, and did little or nothing to alleviate the distress which accompanied the transition from the old order to the new. The first prickings of the social conscience were stirred by the most helpless victims of the 'Industrial Revolution.' The children who worked at the machines in the factories often endured terrible hardships. As we turn over the leaves of the official reports on the employment of children in factories, abundant evidence of their sufferings confronts us on every page. A few concrete illustrations are worth any amount of general comments, and we will therefore glance at the statements taken down from the lips of the children themselves.

A boy employed in the carding-room of a mill at Leicester related his experiences thus: 'I am twelve years old. I have been in the mill twelve months. I attend to a drawing machine. We begin at six o'clock and stop at half-past seven. We don't stop work for breakfast. We do sometimes. This week we have not. We have generally about twelve hours and a half of it. I get 2s. 6d. a week. I have a father and mother, and give them what I earn. I have worked over-hours for two or three weeks together.' At Nottingham a witness fourteen years of age said: 'I have worked in Milnes's factory two years. We go at half-past five; give over at half-past nine. We sometimes stay till twelve. I asked to come away one night lately at eight o'clock being ill. I was

told if I went I must not come again.' His father added: 'It's killing him by inches; he falls asleep over his food at night. I saw an account of such things in the newspaper, and thought how true it was of my own children.' A lad employed at Bradford stated: 'I first began to work before I was five years of age. It was a worsted mill. We used to begin at six o'clock in the morning and go on till eight o'clock, sometimes nine. My legs are now bent as you see.' (The knees, reported the commissioner, were bent dreadfully. The height of the boy, who was fifteen, was 3 feet 9 inches.) 'Got my knees bent with standing so long. Have asked my father and mother to let me stop away; they said they could not do with me laiking at home, there was so many of us laiking from not being old enough.' Another boy started life at a worsted mill near Halifax. 'I was hardly five when I went; I went in petticoats; got a shilling a week when I'd been about a month. We used to begin at six and I have wrought there while seven and eight and nine o'clock at night.'

Another evil connected with child labour was night work. 'We used to come at half-past eight at night,' said a girl fifteen years old, 'and work all night till the rest of the girls came in the morning.' In addition there were many complaints of ill-treatment. 'Kind words are God-sends in many factories, and oaths and blows the usual order of the day.' A little Scottish lassie aged thirteen told how 'when she was a child, too little to put on her ain clathes, the onlooker used to beat her till she screamed again.' It is fair to remark that those responsible for the brutal treatment of children were not the masters but a section of the workpeople themselves, in whose charge the children were placed. However the masters are not to be exonerated from blame, since it was their duty to ensure that their young employees were shielded from violence.

One result of the long hours was that children were robbed of sufficient sleep. 'A great majority of the children,' observed a commissioner, 'live from half a mile to perhaps a mile and a half and in some instances further from the place

at which they work. The time therefore which is necessary to walk this distance must be taken into account as labour to a child, and that too of a distressing kind in winter-time to those who are very poorly clothed and are without shoes and stockings, which is the case in numerous instances. A fine is imposed if the party be not at work in time, and that too—in a great number of mills—bearing a most unjust proportion to the time lost. This severity produces a corresponding anxiety in both young and old to be at the mill in proper time; and in consequence children as well as adults are often called from their rest much sooner than is necessary in order to ensure their being at the mill when the bell rings. They have to dress and in many instances to put up the food which they require for the day, all of which takes up time, and which is so much abstracted from the needful hours of sleep. I have seen children, who have been thus too early called, sitting together in the ash-pit of the fires of the boilers placing their bare feet in the warm ashes and sleeping with their heads upon each other's shoulders until the bell rang, at which time they were expected to go to work.'

The long hours of labour, combined with an insufficiency of sleep, produced the inevitable effects: fatigue, sleepiness and pain causing deterioration of the physical constitution, deformity, disease, and deficient moral and intellectual instruction. 'I can have no hesitation in stating my belief from what I saw myself,' wrote a commissioner, 'that a large mass of deformity has been produced at Bradford by the factory system. The effect of long and continuous work upon the frame and limbs is not indicated by actual deformity alone; a more common indication of it is found in a stunted growth, relaxed muscle and slender conformation. There remains no doubt upon my mind that under the system pursued in many of the factories the children of the labouring classes stand in need of, and ought to have, legislative protection against the conspiracy insensibly formed between their masters and parents to tax them with a degree of toil beyond their strength. I have found undoubted instances of

children five years old sent to work thirteen hours a day; and frequently of children nine, ten and eleven consigned to labour for fourteen and fifteen hours.' In view of this evidence it is not surprising to find the opinion prevalent that the factory children in England were worse off than the slaves in the West Indies. The earnings of young children were scanty in the extreme. Those who were six years old sometimes earned a bare sixpence a week, and the average wage of those ten years old was under two shillings in some districts.

At this distance of time—as we look back upon the controversy between those who were concerned only to exploit the economic potentialities of the inventions and those who applied a social criterion—the question springs to the mind: why did the government refrain from intervention? When we read of the horrors of infant slavery, the long hours of work of men, women and children, and the unhealthy state of many of the factories, we find it difficult to understand on what pretexts it was possible to offer any opposition to official control. We are driven to ask whether the 'Industrial Revolution' created a class of employers in whom all compassion was extinguished; but even so, we have still to explain why public opinion appeared so insensitive to the sufferings of the victims of economic progress.

In order to understand the psychology of those who resisted remedial legislation, two things must be remembered. Firstly: the conditions which prevailed under the early factory system were largely inherited from the industrial society which existed before the inventions. The reason why it was so hard to arouse the national conscience was that the abuses were deep-rooted, although sometimes they were now accentuated. For instance the gravest social problem of the day—the exploitation of child labour—did not originate with the introduction of machinery: on the contrary, children had long been accustomed to work at an earlier age and for less wages than the majority of those who

were taken into the factories.[1] Inasmuch as child labour was an integral part of the older economy, the task of stamping it out in factories naturally became much more arduous. In the same way the protracted hours of labour were a legacy of the domestic system under which a working day consisted of twelve hours' toil. Secondly: the minds of the rulers of England were in the grip of the 'dismal' philosophy of the day, which found economic salvation in the rigid dogmas of *laissez-faire*; and these dogmas were likewise an inheritance from the past. The doctrine of non-intervention had been accepted in principle by the governing class for a century, so that it could not be discarded overnight. The reluctance to revert to the practice of state regulation measured the success with which the entrepreneurs had swayed public opinion in favour of industrial freedom. A signal illustration is afforded by the remark made in an official report in allusion to the demand of the hand-loom weavers that they should not be allowed to work more than twelve hours a day: 'Such remedies as these are so contrary to the principles of political economy that I scarcely need make any further comments on them.' Even attempts to protect children employed in chimneys were opposed on the ground that Parliament should not encroach on 'that great principle of political economy that labour ought to be left free.'

Public opinion was influenced against social reforms by other considerations. Many members of the legislature affected to believe that the evils of the factory system were greatly exaggerated. It was also maintained that conditions were worse elsewhere—in workshops, in the homes of the workers, and in industries other than cotton. The cotton manufacturers therefore remonstrated bitterly that their establishments were singled out for condemnation and state control. Yet there was an obvious advantage in beginning with this industry. It was least difficult to regulate because the factories assembled a large number of children

[1] An argument used in favour of the domestic system was that children could be employed at an earlier age than in factories.

under one roof. Publicity made it possible to gain an intimate knowledge of the industrial position, and the experience thus acquired was subsequently utilized over a wider area. Moreover the rapid growth of the cotton manufacture drew public attention to it much sooner than to the old-established occupations, and accordingly Parliament was more willing to take action. Then it began to be recognized that abuses were by no means confined to cotton; and the scope of factory legislation came to be extended to all textile industries and eventually to non-textile industries. As the favourable results grew conspicuous, it was easier later on to apply the principle to other fields. Another contention put forward the interests of the children themselves, who had to choose between work and starvation since their parents could not maintain them. It escaped notice that one reason why the parents were, as is alleged, unable to support their offspring was that their own wages were depressed by the competition of child labour. In addition it was urged that if children were given any leisure they would become idle and vicious. Here again it was not appreciated that education rather than manual toil was the proper method of keeping children occupied.

The most formidable argument against state interference with the conditions of labour was the plea that any proposal to reduce the hours of work would increase the cost of production and thereby drive trade out of the country. We should no longer hold our own in foreign markets, and the manufacturing population might be deprived entirely of its livelihood. Thus the misguided efforts to alleviate suffering must in the end only induce greater suffering. The first professor of political economy at Oxford, Nassau Senior, even went so far as to claim that the whole profit of factories was 'derived from the last hour;' hence if the working day were reduced by one hour and prices remained the same, net profit would be extinguished. When an early attempt was made to lessen the hours for children from twelve to eleven in cotton factories, a member of parliament objected on the

ground that it would involve a diminution of over two million pounds in the total annual production. This won the retort from another member that it were 'better to give up the cotton trade altogether than to draw such a sum out of the blood and bones and sinews of these unfortunate children.' Apart from humane sentiment, the argument based on profit overlooked the fact that the cost of production does not depend upon the actual hours of labour but upon capacity; and experience has shown that the reduction of hours within reasonable limits makes the operative more efficient as well as more careful in the handling of machinery. Further some manufacturers were ready to accept shorter hours, and well-organized mills were ahead of statutory enactments. State regulation had the effect of protecting the good employers from the bad; it served to prevent the latter covering up their incompetency by the exploitation of their workpeople. In brief the industrial legislation which sprang out of the social problems created by the inventions was intended to reduce order from chaos, and to school the producers of wealth in the wholesome habits of discipline and self-restraint.

The force of circumstances proved too strong for the opponents of factory reform. We have seen that the early nineteenth century was an era of intense unrest when the old landmarks were being submerged in a torrent of industrialism and the frame of society seemed in process of disintegration. The need for extensive readjustments compelled the government to intervene once again in economic affairs. The drift towards *laissez-faire* was arrested, and the control of the state over the productive agencies was once more reasserted. As the evils evoked or intensified by the use of machinery attracted attention, they afforded a convincing demonstration that the accumulation of wealth in the hands of merchants or manufacturers was inadequate by itself to fulfil the requirements of national well-being. The invention of machinery had solved the problem of production, yet it still remained necessary to solve the problem of distribution

—and not merely ensure that wealth was distributed over as wide a circle as possible, but also that it was produced under conditions which did not degrade the mass of the community. Under the influence of this new conception the system of *laissez-faire* began to be assailed by those who believed that the only real wealth is life itself, from which it followed that to sacrifice the health and happiness of the nation in economic pursuits was to defeat the very object which the latter were designed to promote.

Other factors contributed to a change in public opinion, of which the full fruits are coming to maturity at the present day. The tentative efforts at reform were attended with a success which stimulated the activities of the social reformers, while the prophets of woe were discouraged to find that their predictions of national ruin were not verified. Experience has proved, said Lord Shaftesbury, that everything urged by the opponents of factory legislation 'has issued in the very reverse. Has ruin stalked over the manufacturing districts? Has capital quitted the country? Have your wages been reduced to the minimum of subsistence? Has the produce of cotton goods been diminished?' Furthermore one step involved another. Once the country put its hand to the plough it could not turn back, and the movement began to develop of its own momentum. Again prosperity mellowed the outlook of the governing class and rendered possible the experiments in social amelioration. In addition the tory party wanted its revenge for the repeal of the corn laws. Lord Shaftesbury wrote: 'The majority, that in 1847 gave victory to the old supporters of the [Ten Hours] Bill, were governed not by love to the cause but by anger towards Peel and the Anti-Corn Law League. Had not these passions interposed, there would have been no unusual humanity.'

We must not overlook also the chartist movement which focussed public attention on what Carlyle called 'the condition of England question.' The difficulty of securing factory reform had led the chartists to complain bitterly of Parliament's neglect to redress labour's wrongs. 'While our social

evils have repeatedly been brought before you, you—whose duty it was to provide a remedy—have looked carelessly on. Your own commissioners have reported to you that thousands of infant children are doomed to slavery and ignorance in our mines and factories, while their wretched parents are wanting labour and needing bread.' And Carlyle wrote in a similar mordant strain: 'Read Hansard's Debates or the morning papers if you have nothing to do! The old grand question whether A is to be in office or B, Canada question, Irish Appropriation question, West-India question, Queen-Bedchamber question, game laws, usury laws, Smithfield cattle and dog-carts—all manner of questions and subjects except this [the condition of England question] the alpha and omega of all.' Within a few years after Carlyle in 1839 had denounced the legislature for its supine indifference to social issues, a new spirit manifested itself. 'With every session of Parliament,' affirmed Engels in 1844, 'the working class gains ground and in spite of the fact that the middle class is the chief, in fact the only, power in Parliament the last session of 1844 was a continuous debate upon subjects affecting the working class: the Poor Relief Bill, the Factory Act, the Masters and Servants Act.' Chartism stimulated the demand for state intervention because it impressed upon the national imagination an abiding sense of the grievances of the working class; it made impossible for the future the attitude of complacent acquiescence towards social ills. The insurgent movement of the thirties and forties taught the middle class a lesson which it has never forgotten. Hitherto it had displayed a marked reluctance to remedy the economic maladies of society, partly at any rate from a genuine conviction that they were outside the province of the state. 'If you attempt by legislation,' declared Cobden, 'to give any direction to trade or industry it is a thousand to one that you are doing wrong.' Now at long last the public conscience was awakened and from the forties onwards there has flowed a continuous stream of ameliorative legislation designed to raise the condition of the mass of the people.

The English middle class may therefore claim that, whatever the errors and limitations of its stewardship, it was not entirely unmindful of the welfare of those committed by the Reform Act of 1832 to its charge.

Finally, in this recital of the causes responsible for the new attitude of the state towards social problems, the conversion of the economists must be noticed. It came to be recognized that the national income depends, among other factors, on labour; and whatever increases the efficiency of labour ultimately increases the national dividend. Thus there was an economic as well as a humanitarian argument against *laissez-faire*. Excessive hours of work do not add to the production of wealth but tend rather to diminish it, as the experience of the nineteenth century and the recent scientific study of industrial fatigue have made abundantly clear. Similarly low wages may tend to be dear wages. The true facts of the situation were pointed out by Robert Owen as early as 1813, when he exhorted his fellow-manufacturers to devote greater attention to the welfare of their workpeople. 'Experience has shown you,' he told them, 'the difference of the results between mechanism which is clean, well arranged and always in a high state of repair, and that which is allowed to be dirty, in disorder, without the means of preventing unnecessary friction, and which therefore becomes and works out of repair. If, then, due care as to the state of your inanimate machines can produce such beneficial results, what may not be expected if you devote equal attention to your vital machines which are far more wonderfully constructed? Will you not afford some of your attention to consider whether a portion of your time and capital would not be more advantageously applied to improve your living machines?' A convincing proof that the system of *laissez-faire*, as it was carried out in the early nineteenth century, was wrongly conceived lies in the fact that—in spite of the legal restrictions imposed upon capitalists—the industry and commerce of the country, so far from languishing as was freely predicted, expanded by leaps and bounds.

The reaction in the nineteenth century against *laissez-faire* was unquestionably one of the most pregnant consequences of the 'Industrial Revolution:' yet the process of re-education was only very gradual. When the authors of an official report on child labour recommended factory legislation for the protection of children, they were careful to dissociate themselves from 'the pernicious notion'—so they termed it—'of the necessity of legislative interference to restrict hours of adult labour.' The employment of the young stood in a separate category because they were not 'free agents able to protect themselves,' as adult artisans were wrongly presumed to be. Cobden, for instance, wrote in a letter to a friend: 'As respects the right and justice by which young persons ought to be protected from excessive labour my mind has ever been decided, and I will not argue the matter for a moment with political economy; it is a question for the medical and not the economical profession. Nor does it require the aid of science to inform us that the tender germ of childhood is unfitted for that period of labour which even persons of mature age shrink from as excessive. In my opinion, and I hope to see the day when such a feeling is universal, no child ought to be put to work in a mill at all so early as the age of thirteen years.' On these grounds Parliament was induced to relax its system of *laissez-faire* in favour of a limited measure of industrial control designed in the interests of the weakest section of the community.

The outstanding feature of factory legislation was its patchwork character. No attempt was made to visualize the problem of child labour as a whole. On the contrary it was dealt with in piecemeal fashion as the glare of publicity brought to light one abuse after another. This method of seeking practical remedies when particular abuses became manifest is, of course, typical of English institutional development—though the result was that many evils were left to fester in obscurity half a century after similar evils had been stamped out in the better organized industries. The era of factory reform was inaugurated in 1802 by an act which

was confined to apprentices in cotton and woollen factories. It restricted the hours of apprentices to twelve a day and forbade night work. In consequence the factory owners began to employ 'free' children instead of apprentices. The original mills were built in the country on the banks of streams, and they recruited their hands partly by applying to overseers of the poor for pauper children who were conveyed from all parts of the kingdom: some were even sent from London parishes to feed the cotton mills of Lancashire. But when steam was used as the motive force, the mills could be erected in towns where 'free' child labour was plentiful. The next act was passed in 1819 largely owing to the efforts of Robert Owen a pioneer of factory reform, although it fell short of his own proposals. Owen was among the first to perceive that the industrial system, despite its effectiveness in increasing the national wealth, had injurious reactions which could only be counteracted by legislative control. His own achievements at New Lanark had given to the world a shining pattern of the enlightened employer; and teaching by example and precept he sought to impress upon his fellow-countrymen the urgent need for the limitation of hours. Under this act, which was confined to cotton mills, no child under nine years old was to be employed; and those between nine and sixteen[1] not more than twelve hours a day exclusive of meal-times. Meanwhile official reports revealed to the nation the sufferings of children working in other factories. The act of 1833 prohibited the employment of those under nine,[2] and forbade night work for all persons

[1] Eighteen under an act of 1831.

[2] In 1835 children aged 8–12 formed 3.7 per cent. of the operatives in cotton, 6.7 in wool, 21.1 in silk. For those aged 12–13 the percentages were 9.3, 12.0 and 8.7. The limit of age did not apply to silk mills until 1844. The minimum age for the employment of children was progressively raised to fourteen years (in 1920).

Under the Factories Act (1937) and the Young Persons Employment Act (1938) the maximum number of hours of young persons in factories is 44 for those aged 14-16, and 48 for those aged 16-18. The minimum age below which young persons may not be employed in street trading (including the sale of newspapers) was fixed at 16 in 1933—though the local authorities may permit those aged 15 to be employed by their parents, where the latter are already engaged in street trading.

under eighteen in all textile factories. Those between nine and thirteen were limited to nine hours a day (or forty-eight hours a week); those between thirteen and eighteen to twelve hours a day (or sixty-nine hours a week). One and a half hours were allowed for meals, and factory inspectors were appointed to enforce the regulations. The appointment of inspectors was an important landmark since earlier legislation had been largely inoperative owing to lax administration; and it was primarily on their expert recommendations contained in annual reports that the factory code was built up.

Piecemeal legislation in curing one evil aggravated another —the employment of children underground. Parents who were not permitted to send their offspring into factories at an early age sent them into the coal-mines instead; they said that 'the boys refused to go to school and cried to be taken down the pit.' The children commenced from the age of five or six and were kept in the pit for twelve hours or more at a stretch, sometimes going at half-past three in the morning, sitting in the dark, opening and closing trap-doors as trucks passed, or dragging colliery tubs underground crawling on their hands and knees; young girls and women were similarly employed. Alexander Macdonald, a miners' leader and one of the outstanding figures in the history of trade unionism, has related his early experiences. He entered the mines when he was eight years old. 'The condition,' he said, 'of the miner's boy then was to be raised [awakened] about one or two o'clock in the morning if the distance was very far to travel. I had more than three miles. I was raised at two—never later than three' and remained in the mine until about five or six at night. There was no break beyond half an hour's pause for dinner 'to take your bread.' 'We had no rails in the coal-mines to draw upon, that is, tramways for our tubs to run upon. We had leather belts, and [had] to keep dragging the coal with ropes over our shoulders and sometimes round the middle. The state of ventilation was frightful. A very great deal of our drawing, as we call it, was

in the dark on account of the want of ventilation. Of the boys who worked with me almost none are alive now. Deaths were caused by the carbonic acid gas in which we then worked and the degrading kind of labour and the long hours. The men worked as long as the boys'—likewise the women. In 1842 an act prohibited underground work of women and the employment of boys under ten.

The agitation for the restriction of hours was inspired, so far as men like Lord Shaftesbury were concerned, primarily by sympathy for the children but the operatives themselves utilized the agitation as a means of securing directly or indirectly a shortening of their own working day. When the act of 1833 limited 'young persons' to twelve hours a day, the factory owners had recourse to female labour. The men thereupon demanded a reduction of the hours of factory women; they fought the battle (it was said) behind the women's petticoats. Eventually in 1844 women's labour was curtailed to twelve hours a day; three years later the act of 1847 prescribed for women and young persons a maximum of ten hours. Thus after a struggle lasting a generation the Ten Hours Bill became law.

The next stage was the inclusion of the non-textile factories and workshops. Parliament was now ready to extend the scope of factory legislation in view of the evidence, which had accumulated in the protected occupations, that the output did not diminish as a result of shorter hours. In 1862 the children's employment commission was appointed to inquire into industries not already regulated by law. It was discovered that as late as the sixties children were being put to work at five or six years of age; and the hours were excessive—even sixteen a day. 'It is,' said the investigating commission, 'unhappily to a painful degree apparent through the whole of the evidence that against no persons do the children of both sexes so much need protection as against their parents.' The sanitary conditions were repellent in workshops and private dwelling places. Some trades were particularly unhealthy—for instance, lead poisoning in the

pottery trade, while lucifer match-making was liable to cause a dreadful disease. In straw-plaiting the little ones were set a task at three years old. In the hosiery industry, where only 4 per cent. of the workers had been brought within the pale of the factory code, it was 'common for girls as well as for women to sit up all Friday night to work.' The children began at about four years of age, and were 'often kept up shamefully late on Thursday and Friday till eleven or twelve; mothers will pin them to their knee to keep them to their work.' Shirt-makers often toiled from 5 a.m. to 8 p.m.; and hand-workers in the boot trade from 7 a.m. to 10 p.m. Not in one but in all occupations which were unregulated by law the same evil practices were exposed; and from these revelations of abuses emerged a fact of cardinal importance, namely, that control of workshops was a social necessity no less urgent than the control of factories. Accordingly in 1867 two important measures were enacted. One covered establishments in which fifty or more persons were engaged in any manufacture; the other applied to any place in which less than fifty persons were engaged. In 1878 a new act, instead of applying a numerical criterion, distinguished between factories and workshops by the test of whether mechanical power was used. Apart from the shortening of the working day, factory legislation related to the enforcement of sanitary provisions, the fencing of machinery and precautions against diseases in particular trades. The hours of shop assistants were fixed at seventy-four a week in 1887—after the disclosure that some worked eighty-five—but the limit affected only young persons. The act of 1938 prescribed a maximum of forty-four hours a week for those aged fourteen to sixteen, and forty-eight for those aged sixteen to eighteen.[1]

The history of factory legislation shows how during the first half of the nineteenth century the state in its economic policy was groping its way. It could not lightly disentangle

[1] The hours of adult shop assistants were not regulated by law,

itself from the trend—now more than a century old—of *laissez-faire*; and in the absence of a clearly defined social philosophy it handled its problems, as it had done in the eighteenth century, in an empirical piecemeal fashion taking each on the merits of the case. Only slowly and reluctantly did the pressure of circumstances drive it to assume obligations for the maintenance of a minimum standard of working conditions in the industrial establishments that were springing up overnight. Yet looking back on the nineteenth century we may view it, not as the climax of *laissez-faire* (the common interpretation), but as an age in which the fabric of economic life was being reconstructed in preparation for an era that was to dawn in the twentieth century—the almost limitless extension of state functions into every sphere of the national economy. This new orientation was due to several factors—the influence of the humanitarians, the growing prosperity of the country, the momentum of events which once set in motion could not be arrested, and the political enfranchisement of the working class. It was in particular the widening of the suffrage that led Joseph Chamberlain to assert: 'We shall have to give a good deal more attention to what is called social legislation.'

The astonishing range of the government activities at the present day is reflected in the constitution of specialized departments concerned with agriculture, education, health, labour, transport and the rest. The state now embraces within its purview factories, workshops, mines, farming, railways, schools, universities, hospitals, sanitation, highways, lighting, libraries, parks, workhouses and other multifarious spheres: it is even a shareholder in a canal (Suez) and in an oil company. The fact that the state has at its command a highly efficient civil service enables it to undertake responsibilities which were beyond its resources in days when the administrative machinery was impotent to enforce legislation. These responsibilities fall into two categories. One group may be viewed as an expression of the principle which governed the creation of the factory code—the insistence on

a basic standard of welfare. The other group was inspired by purely economic considerations. Something must be said on both these important categories.

A fresh epoch in the history of social legislation was foreshadowed when the state was brought to recognize that the concept of a national minimum already applied to hours of work could not stop short of a minimum of subsistence. The view that low wages are detrimental to the national interest was enunciated by the medical officer of the Privy Council, Sir John Simon, when he wrote in 1854: 'It is the public that, too late for the man's health or independence, pays the arrears of wages.' Towards the end of the nineteenth century the country was aroused to the fact that in spite of increasing prosperity a large portion of the population lived in a condition bordering on destitution. It was estimated that one-third of the working class in London lived in poverty, the figure for a provincial city (York) was approximately the same, while inquiries conducted in other towns disclosed poverty 'on a scale really appalling.' A committee of the House of Lords (1890) summed up the situation of the workers in the sweated industries in these words: 'Earnings barely sufficient to sustain existence; hours of labour such as to make the lives of the workers periods of almost ceaseless toil, hard and unlovely to the last degree; sanitary conditions injurious to the health of the persons employed and dangerous to the public.' At length in 1909 the principle of a minimum wage was embodied in the Trade Boards Act for the benefit of a few sweated industries though it was subsequently extended. In 1912 a minimum wage was established for miners. This was a noteworthy departure because the Trade Boards Act concerned the weakest section of the community, whereas the miners were highly organized. The latter were responsible for another achievement, the eight-hours day (1908):[1] hitherto legal regulation of hours had affected only women and children. A minimum wage was

[1] The hours of miners were reduced to 7 in 1919, raised to 8 after the strike of 1926, and reduced to 7½ in 1930.

instituted for agricultural labourers in 1924.[1] The measures devised in the pursuit of social security include also old age pensions, health insurance, unemployment insurance, and family allowances for the up-keep of growing children.[2] In short, recent legislation makes provision (it is claimed in an official handbook) 'against every one of the main attacks which economic ill-fortune can launch against individual well-being and peace of mind.'

Other things come within the compass of a national minimum. One is education together with meals and medical inspection for school children.[3] Another is housing and (closely connected) public health. The concentration of operatives in factories was responsible for the rise of large towns. The population of Leeds expanded between the beginning and middle of the nineteenth century from 53,000 to 172,000, and Bradford increased from 13,000 to 103,000. This unprecedented growth of urban centres brought in its train grave social problems. The accommodation provided for the new inhabitants was wretched in the extreme, and the government ultimately found it necessary to appoint a commission to inquire into the state of the towns. The report of the commission revealed an incredible situation. It gave the following account of the sanitary conditions existing at Leeds a hundred years ago (and they were equally bad elsewhere): 'By far the most unhealthy localities of Leeds are close squares of houses or yards as they are called, which have been erected for the accommodation of working people. Some of these, though situated in comparatively high ground, are airless from the enclosed structure and being wholly unprovided with any form of under-

[1] It was established in 1917, abolished in 1921, and restored in 1924.

[2] Old age pensions were instituted in 1908; health insurance in 1911; unemployment insurance in 1911 (at first on a limited scale but extended in 1920); family allowances in 1946. To-day the whole nation, and not wage-earners alone, are comprehended in these provisions.

[3] The act of 1870 created machinery for the provision of elementary schools. Elementary education was made compulsory in 1876 and free in 1891. Local authorities were empowered to provide meals in 1906. Medical inspection became obligatory in 1907.

drainage or convenience or arrangements for cleansing are one mass of damp and filth. In some instances I found cellars or under-rooms with from two to six inches of water standing over the floors. The ashes, garbage and filth of all kinds are thrown from the doors and windows of the house upon the surface of the streets and courts. The feelings of the people are blunted to all seeming decency, and from the constantly contaminated state of the atmosphere a vast amount of ill-health prevails leading to listlessness and inducing a desire for spirits and opiates; the combined influence of the whole condition causing much loss of time, increasing poverty and terminating the existence of many in premature death.' Reform proceeded on three lines: rebuilding individual houses when necessary,[1] clearing away slums,[2] and sanitary improvements—for the last of these the Public Health Act of 1848 created a central authority[3]—but executive efficiency lagged behind legislative aspirations.

In these ways during the course of the past century the doctrine of *laissez-faire* came to be abandoned in the sphere of welfare. It had served its historic purpose in advocating the free exchange of goods in commerce and the removal of obsolete restrictions in industry. Yet it had erred profoundly in postulating the free exchange of labour, that is, freedom of contract—the right of the employer to bargain with a workman without any external regulation. The individualists of the day were opposed to legislative interference with the freedom of adult labour whether in respect of hours or anything else—although as the report of a factory inspector pointed out: 'There can be no such thing as freedom of labour when from the redundancy of population there is such competition for employment.' Those who professed, not always with authority, to speak in the name of political economy discarded too hastily the traditional safeguards for the protection of the wage-earners. They failed signally

[1] The Torrens Act, 1868. [2] The Cross Act, 1875.

[3] The Board of Health was short-lived and subsequently the responsibility was transferred to the Local Government Board and then to the Ministry of Health.

to understand that the requirements of a factory age made it imperative to institute fresh conditions of employment—relating to child labour, hours, wages, factory and workshop hygiene—which were not merely a revival but registered an advance upon the older principles of social morality. It is therefore not surprising that the 'political economists' incurred the stigma of being callous. Yet eventually the stark abuses of unregulated industrialism forced public opinion to recognize that maximum production may be purchased too dearly if human welfare is disregarded. Accordingly, while at first the government of the day was only concerned to facilitate the march of material progress, and to remove the obstacles which impeded the free play of industrial capitalism, the feeling steadily gained ground that something else was needed. Reluctantly the community was driven to acknowledge that it could not afford to be indifferent to an environment which went to the very roots of national existence. And the natural conclusion followed that it was incumbent upon the state actively to foster the general welfare by direct regulation instead of trusting to the operation of economic forces, such as unfettered competition, to achieve 'the good life.' As this conviction grew, there gradually developed the notion that it was the province of Parliament to legislate directly with a view to establish the foundations of social security.

The public consciousness became increasingly permeated with a new concept which replaced that of *laissez-faire*—the concept of a 'national minimum,' a minimum standard of well-being to which every person was entitled irrespective of his or her position in the industrial order. The concept could be defended on the ground that it was the best method of increasing production, or on the ground of preserving the nation, or on the ground of humanitarianism; but whatever the reason for its acceptance, it has become a cardinal postulate of social morality. It was foreshadowed by Macaulay when he declared: 'Never will I believe that what makes a population stronger and healthier and wiser and

better can ultimately make it poorer. If ever we are forced to yield the foremost place among commercial nations, we shall yield it to some people pre-eminently vigorous in body and mind.' The principle of a 'national minimum' found expression in factory acts designed to secure a minimum of leisure and safety, in education acts designed to secure a minimum of instruction, in trade boards acts designed to secure a minimum of remuneration, in public health acts designed to improve the health of the people, in old age pensions and insurance against unemployment, and in other measures of remedial legislation. All these strands of social policy were inspired by the doctrine (to quote Joseph Chamberlain in 1885) that 'government is only the organization of the whole people for the benefit of all its members; and the community may and ought to provide for all its members benefits which it is impossible for individuals to provide by their solitary and separate efforts.'

In the eternal flux of human affairs the cycle of the ages often brings mankind back to an earlier standpoint. The exaggerated individualism of a past age has been profoundly modified by the principle that it is the duty of the community to ensure for its members, one and all, a minimum of well-being. With an infinitely superior equipment, and a more conscious sense of purpose, this country is returning to an older tradition—the regulation of economic life in the spirit of social harmony and justice.

Other fields in which the authority of the state has been exercised are in some respects more significant. Perhaps the most instructive episode in the reaction against *laissez-faire* in the nineteenth century is furnished by the policy adopted towards the railways. The measures which were concerned with social welfare might be explained on humanitarian grounds. No such explanation could be offered for the control of the railways—except in the framing of safety provisions, which were also extended to shipping in a stream of enactments improving the situation of the seamen

in regard to wages, medical attention, accommodation, and the rest. The interference of the state in a sphere where purely economic considerations were alone involved was a landmark in the momentous conversion of the business community from the rigid doctrines of non-intervention. The fact that the traders had been exploited by the canal companies gave grounds for apprehension that, if the railway companies obtained a monopoly, they would abuse their position in the same way. In order to safeguard the public interests, Parliament embarked on the wasteful policy of sanctioning competitive lines and fostering rivalry between the companies. The refusal to establish central direction and secure co-ordination of lines was castigated by Porter in his *Progress of the Nation*: 'The *laissez-faire* system—which is pursued in this country to such an extent that it has become an axiom with the government to undertake nothing, and to interfere with nothing, which can be accomplished by individual enterprise or by the associated means of private parties—has been pregnant with great loss and inconvenience to the country in carrying forward the railway system.' However the companies themselves came to appreciate the necessity for amalgamating their lines to ensure through traffic. The prospect foreshadowed the growth of great monopolies acting in concert for the fixing of railway charges. The complaints of traders compelled Parliament to intervene, and the Railway and Canal Traffic Act (1888) laid on the Board of Trade the duty of revising railway rates. Not only were maximum charges imposed but subsequently the companies were required to justify any proposed increase up to the authorized maximum.[1] The reaction from the traditional viewpoint became complete when in the present century the government actively promoted the amalgamation of railways into four groups.[2]

The first world war (1914–18) gave a marked stimulus

[1] This was in 1894. Maximum rates had been fixed the previous year. The act of 1844 laid down that one train must be run daily carrying third-class passengers at a penny per mile. The train was known as 'the parliamentary.'

[2] In 1921. They passed into public ownership in 1948.

to the movement away from *laissez-faire*, because it necessitated an immense extension of interference in all branches of the national economy. Although the end of the war was soon followed by the abolition of many forms of control, the broadening of state activities continued unabated. The mercantilist device of giving bounties (direct financial subsidies) to foster the development of particular industries was now revived notably in the case of agriculture (sugar beet, etc.) and in the construction of houses for the working class. Opinion on the merits of such a practice may be divided, but there can be no question as to the wisdom of official encouragement of scientific research in industry. Another consequence of the war was that the nation grew accustomed to intervention in the economic sphere. Moreover government departments had regulated industry, commerce, shipping and finance, and thereby acquired a corporate experience which is seldom wholly lost and can bear fruit when a fresh change in public policy should provide the occasion. This change materialized immediately after the second world war (1939–45). Now dawned the era predicted by Lord Randolph Churchill half a century earlier: 'The labour interest is now seeking to do for itself what the landed interest and the manufacturing capitalist interest did for themselves when each in turn commanded the disposition of state policy. Our land laws were framed by the landed interest for the advantage of the landed interest. [We are coming] to a time when labour laws will be made by the labour interest for the advantage of labour. The regulation of all the conditions of labour by the state appears to be the ideal aimed at.' A government came into power (1945) with the avowed intention to embark upon a programme of nationalization. The post office, telegraph (in 1870) and telephone system (in 1911) afforded a precedent, while proposals for state ownership of the railways had long been mooted. Lord Londonderry recommended in 1836 that after a term of years the railways should revert to the public; an act of 1844 provided that after twenty-one years

the state could purchase any railway constructed subsequent to the act; the policy was again advocated before the royal commission of 1865 and on other occasions. The nationalization of the Bank of England, of the coal-mines, of transport, of gas and electricity,[1] must be taken to mean that the state is no longer content to exercise control but now seeks to acquire ownership in spheres hitherto the province of private enterprise.

Nationalization in England (except in the case of the post office which is administered by a government department) assumes the form of public corporations. This promises to be her specific contribution to the constitution of a new economic order. A public corporation is an organ of the state which is not bureaucratic: it is moulded in the shape of an autonomous self-governing institution. It differs from a government department because it is managed not by civil servants but by nominees of the government who enjoy independence within the terms of their charter. As a non-profit-making organization with no shareholders and serving the interests of the community, it fulfils the purpose of nationalization: as an autonomous body it is shielded from political influence, ministerial vacillation, Treasury control, and conventional procedure. The public corporation, although it has only come into prominence within recent decades, can be traced back to the middle of the nineteenth century. A port authority was established by an act of parliament in the fifties to own and operate the docks at Liverpool: it functioned as a public service which was not carried on for profit-making. The port authority at London, whose members are partly elected by users of the docks and partly nominated by public authorities, came into existence in 1909. Other docks managed on similar lines include Glasgow and Leith. Private commercial enterprise, however, is not completely excluded either as regards ownership of wharves and warehouses or employment of dock labour. After the first world

[1] These were measures of the labour government which assumed office in 1945.

war there followed the Forestry Commission, the Central Electricity Board (created to construct and administer a system of main transmission lines interconnecting the principal generating stations), the British Broadcasting Corporation, the London Passenger Transport Board, and various other agencies. In these institutions the practical genius of the English people is seeking to work out a compromise between individualism and collectivism, based on the conception of a national economy controlled and guided in certain of its branches by professional corporate bodies acting on behalf of the community.

The public corporation furnishes an alternative both to private enterprise and to state enterprise. There is yet a fourth form of enterprise—municipal trading (sometimes called municipal socialism). The urban authorities, moved by practical considerations and not by political predilections, have constructed harbours, docks, markets, working class dwellings and baths; they operate water,[1] gas, electricity and tramway undertakings; they provide entertainments; even a bank and dairies figure among their interests. In general the municipalities have confined themselves to services which are in the nature of a monopoly.

In one sphere of national life—the relief of the poor—state intervention has had a continuous history extending over many hundreds of years.

As the law of England now stands, an obligation is imposed upon the responsible authority to give aid to any person who is destitute. The virtual right of the indigent to receive succour in case of need is implicit in the whole series of poor law enactments stretching back to the middle ages. It constituted a degree of recognition on the part of society that it had a duty, however imperfectly fulfilled, towards its impoverished members. It was not an accident that the creation of a national system of poor relief was the work of the sixteenth century. Firstly: England was now definitely

[1] Water-works were operated by a municipality in the sixteenth century.

committed to a capitalist regime with its unsettling impact upon security of employment. Secondly: the conversion of arable land into pasture flung upon the countryside those who had hitherto been safely anchored to the plough. Thirdly: the price revolution pressed with peculiar hardship upon that section of the community whose income was most inelastic. Fourthly: England often suffered in earlier ages from famine, and corn prices easily soared to panic heights in times of dearth. In the face of an advancing tide of pauperism, combined with the break-down of religious and voluntary agencies, no government could hold itself aloof. The main principles of the social policy were laid down by stages; and eventually the different strands of poor law legislation were woven into a single texture in the act of 1598, a temporary ordinance perpetuated in the more famous act of 1601. Henceforth down to our own day the responsibility rested upon the local authorities to afford relief to the indigent out of a local fund raised by compulsory taxation. These legislative measures for the relief of destitution were supplemented under the early mercantilist state by administrative measures for the prevention of destitution in so far as this was due to unemployment or a rise in the cost of living.

The Civil War in destroying the power of the Privy Council shattered the machinery of centralized control and so established the independence of the parish. After national uniformity—the ideal of the monarchy—disappeared, each parish was left to go its own way. Another important change was the abandonment of the practice by which work was provided for the unemployed. These twin developments created the framework within which poor relief was administered for nearly two centuries. The consequence of parish autonomy was the increased restraints placed on the mobility of labour by the Law of Settlement (1662), which embodied in a statute the traditional right of the parish to expel all new-comers likely to become chargeable. The consequence of the failure to find employment for the able-

bodied was the institution of the modern workhouse—one of the most debated and least happy features of English social policy. The workhouse became the Mecca of poor law reformers, who promised themselves that the assemblage of the poor within its walls, without distinction of age or sex, would be an effectual method of relieving the aged and impotent, employing the able and industrious, reforming the idle and profligate, and educating the young in religion and industry. There was a rapid growth of workhouses in the early eighteenth century, and an act of 1723 sanctioned the 'workhouse test' by which relief could be refused to any applicant who declined to enter the workhouse. Subsequently the act of 1782 explicitly authorized the payment of outdoor relief to the able-bodied poor whose earnings were considered inadequate. At the close of the eighteenth century when the cost of living advanced sharply, this method of supplementing wages by a parochial allowance proportioned to the current price of bread and the size of the family was general.[1]

The English poor law became the target of much adverse criticism. It grew into a fashion to condemn the practice of giving relief as a source of demoralization in inducing the indigent to believe that—however improvident and idle they might be—the parish was 'bound to find' them. Benjamin Franklin, when visiting London, expressed the trend of opinion when he wrote: Repeal the act of 1601 and 'St. Monday and St. Tuesday will soon cease to be holidays. Industry will increase and with it plenty.' One of the first tasks taken in hand by the reformed House of Commons was the amendment of the poor law. An outbreak of rioting among farm labourers in the south-east of England in 1830 was the immediate occasion of the appointment of a royal commission to inquire into the working of the system. Its famous report appeared in 1834. Starting from the premiss

[1] It was known as the 'Speenhamland system,' because the scales instituted by the Berkshire magistrates at a session held in Speenhamland (1795) were widely adopted.

that 'as the poor's rates are at present administered they operate as bounties on indolence and vice,' it made three outstanding recommendations. (1) That a central board should be established 'to control the administration of the poor laws,' and to frame regulations which 'shall as far as may be practicable be uniform throughout the country.' (2) That parishes should be incorporated into unions for the purpose of providing common workhouses. (3) That the 'most essential of all conditions is that [the situation of the individual relieved] on the whole shall not be made really or apparently so eligible as the situation of the independent labourer of the lowest class;' accordingly 'except as to medical attendance all relief whatever to able-bodied persons or to their families, otherwise than in well-regulated workhouses where they may be set to work, shall cease.' None of these recommendations embodied a new principle. The first sought to put an end to the autonomy of the parish by restoring the authority of the executive exercised down to the Restoration by the Privy Council. The second and third, the institution of workhouses covering a wider area than the parish together with the 'workhouse test,' had been anticipated in the act of 1723.

The Poor Law Amendment Act of 1834 gave effect to the proposals enunciated in the report. It created a central authority in the shape of a poor law commission, whose members were styled 'the three kings of Somerset House' since they were not placed under a minister responsible to Parliament. The commission was intended to be an independent and non-party organ of government, though the experiment of a public department uncontrolled by the legislature proved a failure.[1] The function assigned to it was to frame regulations for the six hundred unions which were now substituted for the fifteen thousand and more parishes hitherto the poor law units. The administration of

[1] In 1847 the department became the Poor Law Board presided over by a minister; in 1871 it was merged into a new ministry, the Local Government Board.

each union was vested in the hands of a board of guardians; and this replacement of appointed magistrates by a network of elected bodies, concerned with the relief of destitution, was regarded by contemporaries as a 'domestic revolution.' The phrase was not without justification: the novel method of national control operating through elected local boards set a precedent for other public services such as health and education.

The 'new poor law' represented an attempt, inspired by the best of motives, to raise the working class out of the degradation into which the old poor law had helped to thrust it. The 'Speenhamland' system of supplementing the scanty earnings of labourers by parochial allowances, while it was well-intentioned, served to pauperize the rural community. It was virtually a subsidy to employers of labour, who were relieved of the responsibility of paying adequate wages; it discouraged hard work since the less a man earned the more he received from the parish; it enabled the improvident to multiply their numbers and so caused further deterioration in their condition; it placed a heavy burden upon the shoulders of those who were themselves often barely solvent. None the less the reformed method of treating destitution was bitterly assailed. Its basic concept was that no able-bodied person was to receive any relief unless he or she entered the workhouse.[1] The rigid application of a hard and fast rule of this nature was clearly indefensible. All social principles must be governed within due limits by circumstances, if they are to avoid the infliction of undeserved suffering. The new system was first introduced into the country districts where it met with little opposition; but the attempt to administer it in the industrial north coincided with a trade depression, and then a storm burst which at one time threatened to bring the kingdom to the verge of civil war. Two men led the agitation against the 'Bastille,' as the workhouse was termed—Richard Oastler who won renown as the opponent of child labour in factories,

[1] Relief in the pauper's own home was still given to the impotent poor.

and Stephens a Nonconformist minister whose fiery eloquence roused his audiences to a fever of frenzy. Their incendiary appeals to violence exhorted the masses to resist by armed force. The style of Stephens's oratory is illustrated in the following passage: 'I have never acknowledged the authority of the new poor law and I never will. I will lay aside the black coat for the red, and with the Bible in one hand and a sword in the other—a sword of steel not of argument—I will fight to the death sooner than that law shall be brought into operation.'

To understand the depth of the passions provoked by the Poor Law Amendment Act, it must be remembered that in the eyes of the poor they had a legal claim to relief by right of inheritance when unable to work or to find employment —not relief doled out in a workhouse but efficient relief in their own homes. Their case rested on the argument that the mediaeval Church had been endowed with land in order to enable it to alleviate distress; therefore the dissolution of the monasteries placed upon their successors the duty of supporting the poor. Nevertheless it was not an abstract sense of injustice which inspired the opposition to the poor law. A labour leader Holyoake, who lived through the greater part of the nineteenth century, has pointed out (with perhaps some exaggeration) the contrast between the beginning and the end of the century as he knew it. 'Now the mass of the people do not expect to go to the workhouse and do not intend to go there. But through the first forty years of this century almost every workman and every labourer expected to go there sooner or later. Thus the hatred of the poor law was well-founded. Its dreary punishment would fall, it was believed, not upon the idle merely but upon the working people who by no thrift could save nor by any industry provide for the future.' The new poor law was denounced as a capitalist conspiracy to force workmen to accept whatever wages their masters offered them, because refusal would mean starvation or the workhouse. This view was not borne out since the level of wages was

maintained: but those who had real grounds for apprehension were the hand-loom weavers condemned by the competition of machinery to earn a miserable pittance in spite of arduous toil. For these men the supplementary allowance from the parish was a matter of life and death, and any attempt to force them into the workhouse and separate them from wife and children was bound to excite the most violent resentment. It was, in short, a vicious circle. The low wages paid to many thousands of poverty-stricken workers made inevitable some system of outdoor relief, yet the latter helped to keep alive the evils which it sought to remove. It enabled employers to sweat their workpeople and to ignore the prime necessity of organizing their businesses on proper lines; while it exposed the independent workman to the competition of cheap and subsidized labour. However the vehement agitation against the new poor law attained its object. The manufacturing areas of Lancashire as well as Yorkshire were exempted from the operation of the 'workhouse test' during the years of depression, and then followed a remarkable outburst of prosperity in which the stormy issues of a troubled decade ceased to have their former importance and the social tension was relaxed.

Thus, contrary to the expectations cherished by the authors of the report of 1834, it proved impossible to ensure national uniformity in the relief of destitution. The central authority framed directions but the boards of guardians could not be coërced into obeying them because they enjoyed financial autonomy. One defiant board was sent several letters every week, 'which it threw under the table.' In the rural districts where the granting of allowances in aid of wages was held to lower the earnings of the independent farm labourer, its cessation had a beneficial effect on wages—especially since railway construction had now begun to open up fresh avenues to employment. In the manufacturing districts, on the other hand, the commission was constrained to acknowledge that it was 'not expedient absolutely to prohibit

outdoor relief even to the able-bodied.' This signal admission only recognized, as we have seen, the facts of the situation. Accordingly, instead of the 'workhouse test' under which the able-bodied were refused relief except in the workhouse, there was adopted the 'labour test'—that is, outdoor relief was given provided the applicant performed a task such as stone-breaking.

In another direction the march of events diverged widely from the recommendations of the report. In place of a 'general mixed' workhouse in which all classes of indoor paupers were relieved under the same roof and the same officials, the report had contemplated a number of specialized institutions—completely separate buildings, each under its own officials, each housing a different class (the aged and impotent, children, able-bodied females, able-bodied males), and each treated in the mode appropriate to the character of its occupants. The central authority was content to establish in every union a single 'union workhouse' to serve as a receptacle not only for the able-bodied and their dependents but for the sick, the aged, deserted children and mental defectives. In the opening years of the twentieth century three-fifths of the workhouses were still of the 'general mixed' type, and served (it was rightly said) as a 'deterrent to the decent not to the work-shy.' 'The principle of separate and appropriate management,' advocated in the report, belatedly received full recognition in all its implications in our own day.

As the nineteenth century proceeded in its course, the growing reaction from *laissez-faire* bore fruit in a revulsion of feeling against the principles of 1834.[1] In part this was due to their very success in abolishing the allowance system in supplement of wages. In part it was owing to a considerable decline in destitution as a result of the increased prosperity of the country—in the middle of the nineteenth century 5 per cent. of the population received relief as paupers, while at the end of the century the percentage had

[1] Namely, the principles of 'less eligibility' and the 'workhouse test.'

been halved.[1] In part it was caused by the recognition that a principal source of pauperism was irregular employment. Above all, public opinion was gradually converted to the view that something more than deterrence was needed to deal with those whom misfortune or misconduct made a burden on society. A vicious circle of poverty, crime and punishment, was broken when the conception of preventive and curative treatment became the basis of a new social philosophy out of which emerged public services of momentous significance. Expression was given to the change of sentiment in the majority and minority reports of a royal commission (1909). Both recommended the replacement of the boards of guardians by county councils and urban councils, the abolition of the union as the poor law unit, and the disappearance of the 'general mixed' workhouse. Here agreement ended. The majority report wished to preserve 'unity in the administration of relief,' though 'public assistance authorities' appointed by the county or municipality were to supersede the elected boards of guardians. The minority report advocated the break-up of the poor law —by placing children of school age under the education committee of the county or municipality; the sick, infirm and infants under the health committee; the mentally defective under the asylums committee; the aged under the pensions committee; together with a national scheme for the unemployed covering insurance, labour exchanges and timing of government orders. The act of 1929 abolished the boards of guardians. Their functions were transferred to county and urban councils which appointed public assistance committees, while the latter in turn set up local committees. The general procedure was to 'take out of the poor law' services affecting health and children, but leaving to the committees the aged and infirm, destitute workmen and vagrants.

The poor law report of 1834 had rejected out of hand the

[1] In England and Wales. On the eve of the first world war it had fallen to 2 per cent. On the eve of the second world war it had risen to 3 per cent.

proposal 'to promise subsistence to all, to make the government the general insurer against misfortune, idleness, improvidence and vice' as 'objectionable in principle.' The new trends of thought now discernible in social legislation—designed to ensure a minimum of well-being—mark a notable departure from the standpoint of a century ago. We no longer consider it a fair assumption that poverty is always the fault of the poor. It is recognized that poverty may be due to economic maladjustments—that the poor may be the victims of the imperfect mechanism of the industrial apparatus, or the victims whose wrecked careers strew the path of human advancement.

In concluding this account of the reaction against *laissez-faire*, two quotations may be contrasted on account of the instructive differences which they disclose in their conception of the province of the state. At the opening of the nineteenth century—when *laissez-faire* was enthroned as the fashionable philosophy of the day—a president of the United States, Thomas Jefferson, delivered an inaugural address in which he said: 'With all these blessings what more is necessary to make us a happy and a prosperous people? Still one thing more, fellow citizens, a wise and frugal government which shall restrain men from injuring one another, shall leave them otherwise free to regulate their own pursuits of industry and improvement, and shall not take from the mouth of labour the bread it has earned.' A British official handbook in current use reflects the spirit of the modern age. 'The first duty of government is to protect the country from external aggression. The next aim of national policy must be to secure the general prosperity and happiness of the citizens. To realize that aim two courses of action must be followed. The first is to foster the growth of the national power to produce and to earn with its accompanying opportunities for increased well-being, leisure and recreation. The second is to plan for the prevention of individual poverty resulting from those hazards of personal fortune over which individuals

have little or no control. Neither of these courses of action can be effective alone. In a community whose earning power was seriously impaired by its failure to use its people and resources effectively—that is to say, by unemployment or inefficiency—it would be impossible to avoid widespread individual poverty whatever special measures were adopted. But it is also true that a nation with a high power of production would not have solved its problem if it included any appreciable section of people who were in want, whether through loss of individual earning power due to ill-health, unemployment or old age, or through inability to provide properly for their children. Only when this problem is also solved has a community achieved genuine social security.'

Chapter Eleven

THE FREE TRADE MOVEMENT

There is a marked contrast between England's industrial policy and commercial policy in the nineteenth century. The trend of the former was from *laissez-faire* to protection, when the state began to re-establish its control over the economic life of the country; the trend of the latter was from protection to *laissez-faire*, when by gradual stages free trade superseded mercantilism.

The free trade movement occupies one of the most significant chapters in English history, and by its repercussions throughout the world it assumes a leading place among the great formative ideas that have shaped human progress. Its basic principle was the antithesis of the mercantile system: it postulated 'plenty' instead of 'power.' In place of the doctrine of economic nationalism in which each country pursued the mirage of self-sufficiency, it substituted the doctrine of the international division of labour in which each country devoted itself to the products for which it was best suited and exchanged its surplus for the products of other nations. At the opening of the nineteenth century two notable branches of the mercantile system had already been discarded—the regulation of the currency by an embargo on the export of precious metals, and the conception of a 'well-ordered' trade on the basis of chartered companies. Four other branches still survived, and their gradual elimination constitutes the history of the free trade movement. These were the protection of native manufactures by tariffs or even absolute prohibitions; the protection of shipping by navigation laws; the protection of agriculture by corn laws; and the old colonial system which treated the colonies as subservient to the mother country and controlled their trade.

The best example of the protection of native manufactures is afforded by the woollen industry which down to the nineteenth century was our greatest industry. In order that clothiers might have an abundant supply of raw material at low prices, the export of wool was forbidden: in order that they might have the undisputed possession of the home market, a prohibitive duty was laid on foreign cloth while certain foreign textiles were excluded. In the same way less important industries were safeguarded by an elaborate and complicated system of tariffs. Agriculture was shielded by virtually prohibitive duties on the importation of wheat and other grains; foreign livestock (cattle, sheep, swine) and all kinds of meat were not admitted. The campaign for emancipating commerce from its shackles made an auspicious start at the close of the eighteenth century, when Pitt concluded a commercial treaty with France in 1786. The ground had been prepared long before Adam Smith by a group of seventeenth-century economists who found in the theory of the 'general balance' of trade (that total exports should exceed total imports) an effective weapon with which to counter the views of those who condemned the trade with any particular country from which imports exceeded exports. Moreover they had anticipated the main arguments in favour of free trade by demonstrating that it was the means to stimulate industrial efficiency and ingenuity, foster a mercantile marine, lower the cost of living, reduce the price of materials, promote the international division of labour, and establish friendship between states. Already at an early date they taught the doctrines that 'the whole world as to trade is but as one nation;' that 'trade is in its nature free, finds its own channel, and best directeth its own course;' that 'England never throve by trade but while she was an universal merchant;' that those who seek to promote the consumption of their own native products 'by an universal discouragement of foreign goods will find themselves in process of time to have little or no trade, and that their own commodities shall remain a drug upon their hands.'

The outbreak of war with revolutionary France wrecked the course of the free trade movement for a generation. It was revived by a petition presented to Parliament in 1820 which was drafted by Tooke the economist and signed by merchants of the city of London. This famous manifesto enunciated the principles of free trade and demanded the abolition of all restrictions on imports which were imposed in the interests of industry, unless they were required for revenue purposes. It affirmed: 'That freedom from restraint is calculated to give the utmost extension to foreign trade and the best direction to the capital and industry of the country. That as no importation could be continued for any length of time without a corresponding exportation direct or indirect there would be an encouragement, for the purpose of that exportation, of some other production to which our situation might be better suited. That a policy founded on these principles would render the commerce of the world an interchange of mutual advantages, and diffuse an increase of wealth and enjoyments among the inhabitants of each state.' The manifesto made a deep impression, and the first step was taken (1824) to break down artificial barriers by allowing the export of native wool. It was a remarkable change in English commercial policy, since for two centuries it had been an article of faith to prevent the transhipment of wool as the raw material on which the chief industry of the kingdom depended. In the following year the duty on foreign cloth was reduced from 50 to 15 per cent. By the withdrawal of protection from the woollen industry, which had always been considered the staple manufacture of the realm, the state threw to the winds the most tenacious doctrine of its former economic creed.

After so striking a departure from mercantilism, the way lay open for a general application of free trade doctrines. The progress of the movement is to be traced in the reform of the fiscal system associated with the names of Huskisson, Peel and Gladstone. Huskisson asserted that 'whenever you give a free scope to industry, to the stirring intelligence and

active spirit of adventure, you are in fact opening new roads to enterprise.' Yet he himself was not a free trader in the full sense of the term; he favoured a limited degree of protection. The drift of his policy was to do away with absolute prohibitions and to reduce duties, though the latter were kept high enough to prevent foreign goods from seriously competing with home manufactures; in the case of no commodity was the protective duty higher than 30 per cent. Subsequently a marked stimulus was imparted to the agitation in favour of free trade by the investigations of a parliamentary committee on import duties. Its report (1840) disclosed that 1,150 different articles were liable to duty: of these 9 yielded £18½ millions out of a total of £22 millions. The committee therefore proposed that duties should only be levied on a small number of articles in order to 'facilitate the transactions of commerce, benefit the revenue, diminish the cost of collection, and remove the multitudinous sources of complaint and vexation.' Thus the revision of the tariffs was prompted less by the doctrinaire advocacy of free trade than by the conviction that the complexity of the fiscal system retarded the progress of industry.

The responsibility for giving effect to the committee's recommendations fell upon Peel, who declared that if imports cause unemployment then our exports must do the same elsewhere. The simplification of the tariffs in the budget of 1842 proceeded on the following lines—the removal of prohibitions; the reduction of duties on raw materials to 5 per cent. at the most; the reduction of duties on partially manufactured articles to 12 per cent. at the most; and the reduction of duties on manufactured articles to 20 per cent. at the most. The budget of 1845 went beyond the reduction of duties by sweeping them away on several hundred imports as well as on all exports. In 1846 the duty on manufactured articles was lowered to 10 per cent. and at the same time the cotton, woollen and linen industries ceased to be protected. It was this budget, also, which doomed the corn laws. Gladstone continued Peel's policy of

abolishing or reducing duties. In 1860 England concluded a commercial treaty with France; as a result duties on manufactured articles were abolished with a few exceptions.[1] Henceforth the fiscal system was virtually reconstructed on the basis of raising revenue. The disappearance of protective tariffs meant that the historic commercial policy of utilizing the mechanism of the customs to promote industry was now discredited.

In the parliamentary debates on free trade it is apparent that abstract economic doctrines played a negligible part. Practical considerations were responsible for the rapid progress of a movement which in the space of two or three decades completely reversed the traditional principles of commerce that had persisted for several centuries. One was the discovery that the national revenue actually benefited by a scale of moderate duties. A chancellor of the Exchequer acclaimed 'the seeming paradox that a larger revenue might be obtained from smaller duties;' but a hundred and fifty years before Swift had enunciated the maxim that in the arithmetic of the customs two and two make not four but often make only one. Another weighty factor was that English manufacturers in general (the silk industry was a conspicuous exception) no longer feared foreign competition at home or abroad. 'In ingenuity, in skill, in energy,' exclaimed Peel, 'we are inferior to none. Our national character, the free institutions under which we live, the liberty of thought and action, an unshackled press, combine with our natural and physical advantages to place us at the head of those nations which profit by the free interchange of their products. And is this the country to shrink from competition?' The beneficial consequences which flowed from the adoption of an enlightened policy were reflected in the expansion of our exports in the face of hostile tariffs. Numerous commercial treaties in the sixties contained the

[1] These were flour, sugar, gold and silver plate, alcoholic drinks, manufactured tobacco, cards and dice. Flour, sugar and plate were subsequently exempted.

'most-favoured nation' clause, by which English goods were admitted by other states on terms at least as favourable as those conceded to similar imported commodities. Moreover experience was to demonstrate that free trade in widening the scope of our oversea markets afforded a larger measure of security: if one temporarily failed, another supplied its place—for instance, when the American Civil War interrupted trade with England, the latter was able to find compensation elsewhere. Lastly the protection furnished by high tariffs was delusive since they encouraged evasion by smuggling, which was practised on an extensive scale in the seventeenth, eighteenth and early nineteenth centuries.

The corollary of a free commerce was a free carrying trade. The first serious breach in the navigation system—which for many centuries had sheltered the mercantile marine from its competitors—was made by the secession of the American colonies, because it was no longer possible to insist that American produce must be carried in English (including colonial) vessels. Accordingly in 1815 ships belonging to England and the United States were accorded similar treatment by the abolition of discriminatory duties upon their cargoes. Then in 1822 the colonies were allowed to trade with foreign regions direct instead of sending their goods first to England, though their trade with the motherland was still confined to English (including colonial) ships. Three years later the government was empowered to conclude commercial treaties which extended the principle of reciprocity to other nations besides the United States, and permitted them to export their commodities to England without having to pay the additional duties levied on goods brought in alien ships. The alternative, declared Huskisson, lay between 'reciprocity of intercourse or retaliation of exclusion.' The various modifications introduced into the working of the system paved the way for the final repeal of the navigation code in 1849. Peel, addressing the House of Commons, rested his case on the unfavourable attitude of

the colonies, on the demands of European countries, on the 'complicated claims' arising out of reciprocity treaties, and on 'the mutilated and shattered state of the navigation laws as they now exist.' Accordingly British ports were thrown open freely to foreign ships; and in 1854 the coasting trade was thrown open. This change in mercantile policy meant primarily that England was exposed to American competition; but owing to the introduction of iron ship-building, she was enabled to preserve her maritime supremacy.

The mercantile system had contemplated not only a self-supporting country but also a self-supporting empire. It was natural therefore that the reaction against mercantilism should extend to the policy of maintaining the colonies in a state of economic dependency upon the motherland. The reaction was assisted by a revulsion of public sentiment after the loss of the American colonies. The celebrated remark of a French statesman, Turgot, now appeared justified: 'Colonies cling only until they ripen.' It was thought that Canada, when she felt strong enough to stand alone, would follow the example of the United States and cut herself adrift from England: meanwhile the latter had the cost of protecting and administering possessions which would remain faithful only so long as it seemed to their advantage. Even in the seventeenth century there was an under-current of feeling against the foundation of colonies on the ground that, at a time when England was under-populated, she could not afford the drain of men and capital. And it could be argued that, for the sake of the dependencies themselves, it might be best to let them go their own way. The United States made rapid strides after she obtained her independence, while the territories which still adhered to us made but slow progress. In the forties of the nineteenth century a new interest in colonization was awakened as a result of the efforts of Wakefield, whose writings attracted public attention. He urged that the Empire could be utilized to

absorb the surplus population, and his views were given prominence in the pages of John Stuart Mill. Subsequently Seeley published his lectures on *The Expansion of England*, in which he contended that our oversea possessions were to be regarded not as distinct from but as an integral part of the parent state; and he stressed the defects of the old colonial system in order to show that the American Revolution was the result of those defects instead of a natural law that colonies must break away. Thus the ground was prepared for a quickening of public sentiment at home, which in the early years of the twentieth century deepened into enthusiasm. Nothing contributed more to strengthen the Empire than the development of ocean navigation, which drew the remotest regions closer to the motherland. Then the dominions became valuable both as producers of food and raw materials and as a market for manufactured goods. In return for the protection which they received, they instituted preferential tariffs; while England, although keeping steadfast to her policy of free trade and refusing to tax imported food, furnished capital at favourable rates. The two world wars powerfully reinforced the ties of sentiment and the consciousness of a common heritage.

The most memorable as well as the most dramatic episode in the history of free trade was the repeal of the corn laws. In this question—'the keystone of protection' so it was termed—the champions and the assailants of the old order joined issue. The removal of protective tariffs aroused little controversy, not because English manufacturers had been converted by the economists to an enlightened philosophy of commerce, but because they were confident of their ability to hold their own in the world's markets. The corn laws stood in a different category. They were the bulwark of the landlord interest, whose economic and political ascendancy was now being successfully challenged by the industrial and commercial interests. Moreover they expressed a deep-rooted instinct that England should raise the food needed to feed

her people and not depend upon external sources for the necessaries of life. Over the battle of the corn laws was fought out the momentous decision whether the country should remain faithful to the traditional system of a self-sufficing economy or discard economic nationalism and fling wide the doors to the imports of the whole globe.

The early history of the corn laws has been sketched elsewhere. They entered upon a new phase after the Napoleonic wars when English agriculture found itself in a critical situation. The high price of corn during the war had encouraged farmers to cultivate every scrap of soil available, and to borrow money from the banks in order to pay extravagant sums for land; rents had risen; landlords had sunk capital in improvements. With the coming of peace prices fell sharply. In 1812 the price of wheat was 126s. 6d. the quarter; in 1815 it was almost halved. As a consequence farmers became insolvent, tenants threw up their holdings, the number of small owners diminished, land went out of cultivation, bankers were forced to call in their loans. It was in these adverse circumstances, when the system of agriculture seemed on the verge of collapse, that the corn law of 1815 was passed. This famous measure, the solitary relic of a corn policy which had persisted for several centuries, prohibited the importation of foreign corn so long as the price of wheat at home did not rise above 80s. It was definitely a protective measure, designed to keep the price of corn at a level considerably above the world price, whereas earlier corn laws were probably not a serious factor in raising prices. In 1828 the principle of a sliding scale of duties was instituted under which the duty varied according to the price of grain; it was 20s. 8d. when the home price of wheat was 66s. a quarter and 1s. when it was 73s. or upwards.[1] The enactment of 1828 was the corn law against which the Anti-Corn Law League directed its fulminations. It should be noticed that preferen-

[1] When wheat was under 66s. the duty rose by one shilling for every shilling the price fell. There were similar sliding scales for other grains. The sliding scale was revised in 1842. Under 51s. a quarter the duty was 20s. and as the price rose the duty fell.

tial treatment was accorded to the colonies in the various corn laws.

The repeal of the corn laws was the achievement of the Anti-Corn Law League under the leadership of Richard Cobden and John Bright. 'It is necessary for the concentration of a people's mind that an individual should become the incarnation of a principle.' Thus wrote Cobden; and so successfully did he embody the principle of free trade that in Peel's view 'the name which ought to be chiefly associated with the [repeal] is the name of Richard Cobden.' In 1838 the prime minister, Lord Melbourne, had informed all petitioners for the repeal of the corn laws that 'they must look for no decided action on the part of the government until they had made it quite clear that the majority of the nation were strongly in favour of a new policy.' The price of wheat had then risen to 77s. a quarter, and Manchester accepted the challenge. The Anti-Corn Law League was formed (1839) in place of a previous organization which had made little headway. The prospects of success at the moment did not appear rosy. The landlords displayed the utmost determination to resist the attack upon the last stronghold in which they were now entrenched. The founders of the League were told: 'You may as well try to over-turn the monarchy;' while Lord Melbourne declared that the proposal to repeal the corn laws was the most insane proposition which ever entered a human head. The House of Commons still representing in the main the landed interest refused to take into consideration petitions against the corn laws. However the reform of Parliament had opened the way for movements to organize public opinion and by constitutional agitation bring pressure to bear upon the legislature. Inspired by the example of the Catholic Association which had achieved Catholic Emancipation a decade earlier, the League actively bestirred itself. Subscriptions poured in and large sums of money were collected to conduct a propaganda campaign. 'Tons' of tracts were distributed: hundreds of public meetings were held in town and country. The League sent missionaries

throughout the length and breadth of the kingdom. These missionaries encountered much local opposition from vested interests: sometimes they were denied the use of a hall on the ground that they would make the labourers discontented, and sometimes they were roughly handled. Cobden believed that a moral and even a religious spirit must be infused into the question of the corn laws; and that, agitated in the same manner as slavery had been, 'it will be irresistible.' It was in this atmosphere that the case for and against the corn laws was debated.

Take first the arguments for their maintenance. The landowners found themselves in a difficult position after the conclusion of peace in 1815. During the war they had sunk capital in the soil, and some had mortgaged their property to raise money for improvements. They were now menaced with ruin if war prices were permitted to fall to a peace level: as Disraeli observed, they were tortured by 'visions of deserted villages and reduced rentals.' The claim was also made that their rank in society involved them in obligations and responsibilities which subjected their estates to special burdens. In the eighteenth century Pitt had pronounced a warm panegyric on the landowners 'who form the lime which binds and knits society together, on whom in a great measure the administration of justice and the internal police of the country depend, from whom the poor receive employment, from whom agriculture derives its improvement and support, and to whom of course commerce itself is indebted for the foundation on which it rests.' In the next place the corn laws were an insurance against undue dependence upon foreign countries, and stress was laid on the danger of excessive reliance upon sources of food supply which in time of war could be cut off. Finally it had always been the traditional policy of England to foster a rural population. In brief, if legal protection—which had existed for several centuries—were discarded, then free trade in grain would be detrimental to the landed interest by causing a fall in rents; it would hurt farm labourers by reducing opportunities for

employment; it would be fatal to the nation as a whole since land would go out of cultivation and as a consequence the area devoted to arable production would proportionately shrink.

On the other side a formidable array of arguments was marshalled against the retention of the corn laws. The latter belonged to an age in which the wealth of England lay in her fields and the mass of the inhabitants followed the plough: an age when the encouragement of tillage even if at the expense of the urban population might be considered defensible. But in the nineteenth century the centre of economic gravity had shifted. The wealth of England now lay in her factories and workshops, and the artisan and the trader emerged into the full light of day as the typical figures of English life. In the altered circumstances the corn laws appeared to be purely a class measure which was beneficial to a single section of the community—the landowners—yet was harmful to the rest. The crux of the controversy was the claim that the protection of agriculture should be judged by its reaction upon industry and commerce. The effects on industry were injurious in the extreme. The poverty of the people was attributed to a bread tax 'levied for the benefit of the richest portion of the community.' Cobden pictured the intense privations that have left an indelible stamp on the 'hungry forties.'[1] 'He knew of a place where a hundred wedding rings had been pawned in a single week to provide bread, and of another place where men and women subsisted on boiled nettles.' The age of the 'common man' was foreshadowed in Peel's pronouncement that 'the real question at issue is the improvement of the social and moral condition of the masses of the population; to this great question the mere interests of landlords and tenants were subordinate.' Bread was the main article of consumption for the vast proportion of the realm which earned a subsistence by

[1] In 1840 the average price of British wheat per quarter was 66s. 4d. (in August it touched 72s. 6d.); in 1841—64s. 4d.; 1842—57s. 3d.; 1846—54s. 8d.; 1847—69s. 9d. (in June it touched 92s. 10d.).

manual labour—often constituting more than one-half of its expenditure. Accordingly the first step towards improving the standard of life of the working class was the removal of the tax on bread, in order to leave artisans and farm labourers with a larger margin for meat, dairy produce, fruit and manufactured goods.

The mischief done by the corn laws was not confined to the home market for industrial products; the oversea market was also severely curtailed. It was contended that other nations were unable to buy English commodities except in return for their corn and timber. We were compelling them to develop their own manufactures because they could not afford to buy ours. Moreover foreign competitors were declared to enjoy an advantage since the cost of living was lower abroad. The Manchester remedy for unemployment was 'to invite all the world to become our customers by opening our ports to their products in exchange.' The free entry of corn into England would stimulate tillage in grain-bearing countries, keep their labourers on the land, and check the growth of their industry. In exchange we should export more goods and so employ more labour, which would serve to raise wages.[1] Thus in the eyes of their critics the corn laws were productive of a three-fold evil. They contracted the domestic demand for native wares owing to the poverty of the people; they checked the expansion of the foreign demand owing to our refusal to buy food abroad; and—a vital consideration for an island power with scattered dominions—they had an adverse influence upon the mercantile marine whose existence was bound up with the fortunes of the carrying trade.

The opponents of the corn laws were at pains to show that they were not 'advantageous to agriculture.' They did no good either to the farmer or the labourer. The farmer did

[1] This contention has been questioned on the ground that the growth of English exports before the repeal was greater than immediately afterwards. But after the earlier rapid rise further progress would naturally slacken at first. Also foreign states could not immediately readjust their economic system to the new orientation in English commercial policy.

not benefit by high prices which meant high rents—'the corn law is a rent law.' Nor was there any assurance that prices would remain high, for legislation could not prevent a fall where it could not control the size of the harvest. When the harvest was abundant prices slumped: they were 96s. 11d. in 1817, 44s. 7d. in 1822, 68s. 6d. in 1825, 39s. 4d. in 1835, 70s. 8d. in 1839, and 50s. 1d. in 1843. Protection thus failed signally to secure steady prices, and the farmers considered stability their primary interest. Wide fluctuations in prices rendered farming a highly speculative business. A deficient harvest resulted in famine prices and so induced the farmer to cultivate inferior soil; the next year a good harvest might bring prices down and ruin him. Furthermore the corn-grower, though he might profit by the duty on grain, had to pay for the protection of any feeding stuffs bought for his cattle. In addition other branches of agriculture were discouraged by the high price of bread, which curtailed the public demand for meat and dairy produce. Above all the protective system was condemned on the ground that it led to bad farming because it promoted inefficiency. The salvation of agriculture, it was insisted, lay in improving the standard of farming by working with adequate capital. 'How is it,' asked Cobden, 'that in a country overflowing with capital, where every other pursuit is abounding with money, when money is going to France for railroads and to Pennsylvania for bonds, when it is connecting the Atlantic with the Pacific by canals, and diving to the bottom of Mexican mines for investment, it yet finds no employment in the most attractive of all spots, the soil of this country itself?' Insufficiency of capital was the root cause of the farmer's distressed condition; repeal the corn laws and landowners would be forced to develop the resources of the soil in order to increase its yield. The more all countries freely exchanged their commodities with one another the richer they became, and the more the consumer could afford to buy bread as well as other food. Under the stimulus of a growing demand the output of agriculture in England would then be increased

by compelling the application of fresh doses of capital and labour to the land. Hence the conclusion was drawn that the only way for farming to become permanently and naturally prosperous was not by artificial expedients, such as protective tariffs, but by a larger circle of international exchange.

The wretched plight of the English farm labourers was adduced in evidence that the corn laws brought no benefit to this impoverished section of the rural community. Their low wages did not fluctuate according to the price of wheat; and as they spent a larger proportion of their earnings on bread than did any other class, they suffered most from a precipitous rise. 'I be protected,' a labourer is quoted as saying, 'and I be starving.' It was estimated that less than thirty shillings a year on manufactures (except shoes) were expended for a whole family. 'We have exported more goods to Brazil in one year than have been consumed in a year by the agricultural peasantry and their families.' Their poverty was shown also in their dwellings, of which some were stigmatized as 'worse than the wigwams of the American Indians.'

While the advocates of repeal relied upon the strength of their destructive criticisms, the governing factor in the final analysis was the growth of population. The corn laws could not be debated merely from the angle of how far English agriculturists were able to feed the existing population, but whether they could cope with the needs of a rapidly expanding population at reasonable prices. It was imperative to enlarge the area of supply; and though the production of home-grown wheat had been increased by the enclosure of the waste, it was necessary to draw upon external sources in order to obtain abundance of food at the 'natural' world price. It was not less vital to provide employment for the new recruits to industry, and this meant winning access to foreign markets by our willingness to accept their agricultural produce.

The struggle between the champions of the corn laws and

their assailants developed into a class struggle between the landed and the industrial interests. The landowners displayed a sympathetic regard for the condition of the operatives in the factories. The manufacturers were distressed at the condition of the labourers in the fields. Cobden confessed that 'the cotton lords are not more popular than the landlords,'. and the abuses of the factory system discredited the cause of the free traders. One section of the working class, in whose eyes the real enemy was not the corn laws but capitalism, was hostile towards the Anti-Corn Law League which was mainly composed of capitalist employers. The chartists resented the free trade agitation inasmuch as it distracted public attention from their own campaign for an extension of the suffrage. Again their belief in the iron law of wages—the theory that the labourer received only a subsistence wage, of which the amount was determined by the price of the necessaries of life—led many chartists to infer that it was a matter of indifference to the working class whether the price of bread was high or low. Placards were posted at Manchester with the following notice: 'Why do these liberal manufacturers bawl so lustily for the repeal of the corn laws?—because with the reduced price of corn they will be enabled to reduce the wages of working men so that they may compete with foreigners who live upon potatoes.' Cobden sought to meet the damaging accusation that factory owners might cry 'cheap bread' but they meant 'low wages.' He contended that the repeal of the corn laws in extending our foreign trade would create a demand for labour and so raise wages. He exposed the fallacy that low wages and cheap labour are synonymous, and claimed that the highly-paid labour of England was the cheapest in the world.

For a time Peel was able to resist the pressure of the League owing to a succession of good harvests, but in 1845 and the following year the potato crop in Ireland was a disastrous failure, and the 'potato plague' prevailed also in England. 'It was the rain,' said Morley, 'that rained away

the corn laws.' His famous dictum meant only that the crisis furnished the immediate occasion. In the eighteenth century the government had been accustomed in time of famine to throw open the ports temporarily. Peel recognized that the state of public opinion made such a solution impracticable, for it would have been impossible to reimpose the corn laws after a term of suspension. It was the work of the League in preparing the country for a more radical treatment that turned a freak of the weather into a *deus ex machina*. The act of 1846 provided for the abolition of the corn laws in 1849. For three years a new sliding scale of duties was imposed under which foreign wheat paid 4s. when the price per quarter rose to 53s. and upwards. Then in 1849 a nominal duty of one shilling per quarter was levied for registration purposes on imported wheat and other grains: in 1869 even this duty was abolished. In his resignation speech Peel uttered these memorable words: 'It may be that I shall leave a name sometimes remembered with expressions of good will in the abodes of those whose lot it is to labour, and to earn their daily bread by the sweat of their brow, when they shall recruit their exhausted strength with abundant and untaxed food the sweeter because it is no longer leavened by a sense of injustice.'

In the short space of seven years the determined efforts of the League had been crowned with victory in the face of difficulties that seemed insuperable; and it had shattered a structure which was considered as safe as the monarchy. What was the reason for its success? Peel himself contended that his proposals for the repeal of the corn laws were a logical development of those principles which had governed his revision of the tariff in 1842. 'You could not long continue,' he said, 'to apply different principles in respect to agriculture from those you had applied to other articles of commerce.' His conversion was no doubt sincere, yet it was probably stimulated by one very important circumstance. The League was all the more potent since it represented the force of

public opinion outside a House of Commons which was unrepresentative of the nation. The total number of the electorate was about three-fourths of a million or one-seventh of the male population. Manchester, which had double the value of the property of Buckinghamshire, returned only two members while Buckinghamshire had no less than eleven. It is said that when Peel heard of the fall of King Louis Philippe, he exclaimed: 'This comes of trying to govern the country through a narrow representation in Parliament without regarding the wishes of those outside. It is what this party behind me wanted me to do in the matter of the corn laws, and I would not do it.' The awareness of Parliament that it was not broad-based, that it represented only vested interests, sapped its powers of resistance to the demands of the League.

When appraising the significance of the repeal of the corn laws a distinction must be drawn between the immediate and ultimate effects. In a broad view the repeal was the coping stone of the edifice of free trade: it marked the final stage in the struggle against mercantilism. Henceforth for nearly a hundred years England discarded the system of economic nationalism—on which the fabric of her agriculture, industry and commerce had been reared—in favour of international co-operation. The momentous change of policy eventually had profound repercussions upon the fortunes of the farming community, though its true inwardness was hidden from most contemporaries. They stressed the fact that the corn-grower, while deprived of artificial protection, continued to enjoy the 'natural' protection afforded by his proximity to the home market. Wheat might be more cheaply raised abroad, but the cost of freight and insurance must be added to its price. They believed that no land in England would be thrown out of cultivation—and for a generation their optimism was well-founded. Another consequence of the repeal was the transference of power from the landed interest to the industrial and commercial interests.

This aspect of the free trade movement as a class struggle[1] was frankly recognized: Cobden himself described the agitation as 'eminently a middle class agitation.' The middle class had successfully asserted its claim to a share in government, but the fight for the Reform Act was only the first phase of its conflict with the aristocracy. The second phase was the fight against the corn laws, whose retention would have meant that the middle class enjoyed the semblance not the substance of political power. The issue at stake involved the crucial question as to which section of the community should occupy the chief place in the national economy. Cobden avowed openly that 'the conflict was not merely a battle about a customs duty; it was a struggle for political influence and social equality between the landed aristocracy and the great industrialists.' The repeal of the corn laws was thus the complement of the Reform Act, because economic power was the logical fruit of political power. Deprived of their former ascendancy in the state the landowners were relegated to a subordinate position. Not indeed that they had lost their power to retaliate. They had their revenge on the manufacturers by passing the Ten Hours Act of 1847 on behalf of the operatives in factories: but the day of their supremacy had passed from them beyond recall. The stage was now set for the dawn of a fresh era in the annals of English society—'a bagman's millenium.'[2]

In the eyes of its leading exponent the triumph of free trade transcended the narrow grounds of national self-interest or mere changes in political balance. It held out the golden promise that it would 'promote the enduring interests of humanity,' 'alter the relations of the world for the better,' and prove to be 'the only human means of effecting universal and permanent peace.' The conception of free trade as

[1] The conflict of interests between agriculturists as primary producers and industrialists as consumers of food and raw material had persisted for centuries. 'The landed and trading interests are eternally jarring,' exclaimed an old writer.

[2] The phrase was scornfully applied to Cobden's policy. The term *bagman* denoted originally a commercial traveller who carried samples in his bags.

the basis for a new international order, both economic and political, deepened immensely its significance. On the economic side the belief prevailed that an enlightened commercial system would be universally adopted, and that the circle of exchange would be progressively widened until the whole earth was comprehended in its embrace. On the political side there was the conviction that in free trade had been discovered a principle which would liberate mankind for ever from the scourge of wars, since the lust of conquest would die away when men could freely exchange the fruits of their labour without let or hindrance. The mists of hostility which now divided the nations would be dissipated in the sun-lit atmosphere created by the sense of an indivisible unity of interests springing from material well-being. For a brief moment, pregnant with destiny, this vision of the future seemed justified: but only for a brief moment. With the proverbial blindness of contemporaries Cobden, despite his insight, had failed to grasp the significance of the mighty force which was to dominate the next hundred years, turn the Continent of Europe into a shambles, and effectually counteract the influence of free trade doctrines. It was the force of nationality, which pursued in a distorted form served only to raise fresh barriers among the peoples of the earth.

The free traders had cherished the belief that all governments would eventually follow England's example and adhere to the principles of a progressive commercial system. If their aspiration had not been darkened all too soon by an intractable fate, recent history might have worn a different aspect: it is at least probable that the two world wars would have been avoided. But the aftermath of the Franco-Prussian conflict (1870) shattered the high hopes that mankind would beat its swords into ploughshares and concentrate its energies upon the peaceful interchange of its products. The trend towards free trade was soon reversed. When the Anglo-French commercial treaty of 1860 lapsed,

it was not renewed: in Germany the chancellor Bismarck, in spite of his categorical assertion that a war of tariffs was worse than a war of cannon balls, embarked upon a protective policy: in the United States protectionist banners were inscribed with the slogan—'Protection against the pauper labour of Europe.' Disappointment at the backsliding of other countries caused a revulsion of feeling in England, where the swing of the pendulum was producing an inevitable reaction against the enthusiasm of the preceding generation. The new orientation was manifested in a revival of the plea for reciprocity. When in the free trade debates Disraeli had asked Peel whether he believed that he could fight hostile tariffs with free imports, his argument for the retention of tariffs—as a bargaining weapon to extort concessions—was rejected by those who refused to 'make the folly of others the limit of our own wisdom.' Subsequently Disraeli, now prime minister, was constrained to admit that 'practically speaking reciprocity whatever its merits is dead.' Yet in the eighties the notion was once more advanced that we should use the power of retaliation and fight tariffs with tariffs. The great depression of this decade created a pessimistic sentiment—which has periodically recurred during her long history—that England had lost her lead among the industrial nations. Lord Randolph Churchill declared that iron and silk were dead, coal languishing, cotton seriously sick, the woollen industry at its last gasp. Out of the conviction that English commercial supremacy was on the wane,[1] the protectionist movement was reborn in the foundation of a Fair Trade League which gave articulate expression to the demand for a tariff on foreign manufactures. Its propaganda was fortified by the campaign of Joseph Chamberlain who believed that imperial preference would strengthen the Empire by reinforcing natural ties of sentiment with the material bonds of economic interests. Even while the issue of free trade was still undetermined, the warning had been uttered that 'by the withdrawal of the substantial advan-

[1] Actually in 1913 our oversea trade attained its pinnacle.

tages which bind [the colonies] to your distant authority, you will yourselves take the first step towards severing the connexion.' Although the ground was being prepared for the coming changes, the reaction against free trade appeared to make little headway notwithstanding the fact that the first world war revealed the extent to which the country had become dependent upon the importation of vital commodities—synthetic dyes, drugs, optical instruments. It was not, as will be seen later, until England was in the throes of a world-wide depression that in a wave of panic she abruptly discarded an enlightened commercial system which had conferred inestimable benefits upon her people, and had served as a beacon of light to mankind.

Chapter Twelve

THE NATIONAL ECONOMY (1815–1914)

I. Industry

In the hundred years that lie between the end of the Napoleonic wars and the first world war England entered into her full economic heritage. She occupied a unique position. The inventions gave her the start of all her competitors and machinery poured into her lap a seemingly inexhaustible store of wealth. In the nineteenth century she stood pre-eminent as the leading commercial nation on the face of the globe, as the possessor of the largest mercantile marine, and as the universal banker, insurance and commission agent. Her population enjoyed a standard of living higher than that of any other European country. Her surplus wealth fertilized the barren places of the earth and promoted material progress in backward lands. She was the pioneer of free trade, her doors were thrown wide open to the imports of both hemispheres, and she imposed no customs duties on foreign commodities other than those levied for revenue purposes. After the abolition of protective tariffs in industry, the corn laws in agriculture and the navigation acts in shipping, she appeared to have renounced once and for all every vestige of the mercantilist doctrine of economic nationalism with its concept of self-sufficiency. By the teachings of her economists and the practice of her statesmen she upheld the enlightened doctrine of a world economy with its concept of specialization; and she exhibited a shining example of the blessings of international trade. The pursuit of a far-sighted economic policy based on the free exchange of goods, coupled with the energy of her people, the mildness of her political institutions and the absence of domestic turmoil, enabled English society to reap in ample measure the harvest which was the fruit of the ingenuity of its inventors, the organizing ability of its entrepreneurs and the skill of its artisans.

The remarkable expansion of the national economy in the nineteenth century will be shown in the present chapter by a survey of the salient features of the principal industries.[1]

If the cotton mills 'lately erected in the neighbourhood of Manchester' were 'suffered to destroy our woollen and stuff [worsted] manufactures, they will prove the most fatal discoveries ever made in Old England.' The panic-stricken warning was uttered in 1782 when the woollen manufacture had enjoyed for seven centuries its proud status as the premier industry of the realm and one of the pillars of the state. Within a few decades wool was dethroned from its eminence by its upstart rival, and the claim advanced nearly half a century later could no longer be contested that 'cotton by the magnitude of its manufacture must justly rank as the staple trade of this kingdom.' Norwich, once the metropolis of the worsted industry and the greatest manufacturing town in England, was now displaced by Manchester the metropolis of the cotton industry—of which Camden had written in the reign of Elizabeth that it excelled in 'the glory of its *woollen* cloths which they call Manchester cottons.'

The 'Industrial Revolution' had notable effects upon the location of the woollen and worsted manufactures. In marked contrast with cotton which has always been in the main associated with a single county (Lancashire), they were

[1] The distribution of the industrial population in some of the principal occupations in Great Britain is indicated (approximately) in the census returns as follows. In 1851 (population 21 millions) agriculture absorbed 1¾ m., building ½ m., cotton ½ m., woollen ¼ m., coal ⅕ m., iron 80,000. In 1901 (population 37 m.) agriculture absorbed 1½ m., manufacture of metals, machines, conveyances 1½ m., coal ¾ m., cotton ½ m., woollen ¼ m. In 1931 (population 45 m.) agriculture absorbed 1⅕ m., metals, etc. 2½ m., coal 1⅗ m., cotton ½ m., woollen ¼ m.

A comparison of the census returns of 1881 and 1931 shows the proportions engaged in the principal industries per 10,000 occupied. (The figures for 1931 are given in brackets.) Fishing 48 (30), agriculture 1,250 (567), coal 343 (554), manufacture of metals, machines and conveyances 728 (1,145), cotton 408 (281), woollen 198 (118).

For the numbers engaged in the principal industries and services on the eve of the second world war, see Chapter Fifteen.

in former ages carried on all over the country—whereas at the present day they are concentrated mainly in the West Riding of Yorkshire. In East Anglia, its most ancient and long its principal centre, the worsted industry is practically extinct. The west country—the seat of the broadcloth manufacture on which the fame of English textiles rested down to the nineteenth century—still makes the finest woollen cloth, but of it may be said: 'Its glory hath departed.' This migration is usually ascribed to Yorkshire's mineral assets. The explanation overlooks the fact that industrial expansion started in the north before the great inventions made iron and coal indispensable. The dormant energies of the backward northern regions were being quickened to new life in the eighteenth century by the resourcefulness and adaptability of a thrifty and hardy people. Contemporaries accounted for their rapid progress on the ground that the price of labour was lower and that wealth 'had not produced indolence.' The cheapness of Yorkshire cloth, combined with a very colourable imitation of its competitors' products, enabled the West Riding to gain command over markets at home and abroad. The early Yorkshire clothiers were therefore not without justification when they boasted—even before the days of machinery—that, 'in spite of fate,' the woollen manufactures would 'come into these northern counties.' The 'Industrial Revolution' assured them the final victory in the task which they had taken upon themselves to wrest from the east and west of England their industrial pre-eminence, largely owing to the fatal delay in the introduction of machinery in the old-established seats of the textiles. The reasons for delay were twofold—firstly the conservatism of the workers who claimed a vested interest in the processes and were able to prevent, or at any rate retard, the use of machines which destroyed this vested interest; and secondly the want of enterprise on the part of the manufacturers who lacked the energy displayed by their Yorkshire competitors. The latter were stimulated by the proximity of the Lancashire cotton

industry to discard the traditional organization of the woollen industry, and develop it on the lines of the factory system. 'While the men of Leeds and Huddersfield,' wrote a hand-loom commissioner in 1839, 'were constantly in their mills and taking their meals at the same hours as their workpeople, the clothiers of Gloucestershire, some of them, were indulging in the habits and mixing with the "gentle blood" of the land.' The failure to keep pace with the needs of the time enabled Yorkshire—which showed greater power of adaptation to the changing industrial order—to reap the first-fruits of the inventions, to forge ahead, and to consolidate its position.

Another change, destined to have a profound influence on the economic development of a newly-discovered continent, took place in the sources of our wool-supply. For hundreds of years the raw material of England's greatest industry was mostly raised at home: but by the end of the seventeenth century the quality of native wool had deteriorated owing to the breeding of larger sheep in place of the 'ancient small breed.' 'So long as Englishmen are fond of fat mutton, they must not expect to grow fine wool.' As a result manufacturers became increasingly dependent upon foreign wool. At the beginning of the nineteenth century the quantity of imported wool was about 8 million lb.; at the middle 74 millions; at the end 560 millions.[1] Originally the main source was Spain, then Germany, and eventually Australia. When the first fleet sailed from England for New South Wales in 1787, it took on board at the Cape of Good Hope some sheep of the Spanish breed. The oak springs from an acorn. A handful of sheep, twenty-nine in 1788, increased to ten thousand within fifteen years. Australia sent us 100,000 lb. of wool in 1820 and nearly 40 millions (over half the total quantity imported) in 1850.[2] Meanwhile the manufacturers had been forced (1824) to abandon their age-old opposition

[1] In 1913—806 millions; in 1938—881 millions.

[2] In 1840 Australia sent 10 millions and Germany 22 m. In 1850 the corresponding figures were 39 m. and 9 m. In 1913 Australia and New Zealand sent 446 m. out of a total of 806 m.

to the export of home-grown wool in return for the removal of a heavy duty recently imposed on imported wool. The export of domestic wool grew at a much slower rate; but in 1850 it reached 12 million lb. and in the early twentieth century 38 millions[1]—approximating to one-third of the estimated total clip.

The manufacturers, who yielded up their monopoly of the native raw material with grave misgivings, had predicted that if foreign nations were able to procure English wool to mix with their own the export of woollen goods from this country would immediately cease. Never was a prophecy more signally falsified. Owing to the perfection of the machinery and the skill of the makers who had now to depend upon their own ingenuity in place of artificial protection, the oversea trade was not destroyed; notwithstanding the competition of the cotton industry, woollen exports in the course of the nineteenth century trebled in value. Inevitably there had been a decline in the proportion of woollen exports to total exports. In the middle of the seventeenth century the former accounted for nearly two-thirds, in the early eighteenth century for almost one-half, in the early nineteenth century for one-sixth, in the early twentieth century for one-thirteenth of total exports.[2] Moreover it must be remembered that (unlike the cotton industry) the domestic market is far more important than the foreign market: about two-thirds of the output were absorbed at home.

In spite of the growth of the woollen manufacture in the nineteenth century the numbers employed did not expand. The reason lies in the adoption of mechanical methods which made possible an immense increase in the volume of production without an increase in the volume of human labour. Indeed the numbers returned in the census of 1851 (one-quarter of a million) were approximately those recorded

[1] In 1938—30 million lb.

[2] In 1854 woollen exports amounted to £10½ millions (total exports £97 m.); in 1900 to £24 m. (total £291 m.); in 1913 to £38 m. (total £525 m.); in 1938 to £27 m. (total £471 m.).

half a century later.[1] The first example of the application of a motive force to the textile industries is afforded by the use of fulling mills for the purpose of thickening woollen cloth; they were forbidden in London as early as the thirteenth century. Gig mills which raised the nap on cloth in the finishing processes were prohibited by statute in the sixteenth century. Surprisingly enough they were employed in the west country long before opposition was overcome in Yorkshire where most kinds of machinery were introduced more easily than elsewhere. The cloth-finishers also objected to shearing-frames for cropping the nap, which were worked by power and effected a great economy of labour. Yet though the shearmen put up a stiff fight against machinery they failed, despite their strong organization and the Luddite riots, to prevent the displacement of manual operations by mechanical contrivances in the opening decades of the nineteenth century. At the other end of the industry, where the women and children could offer no resistance, the preliminary processes were being more rapidly revolutionized. This was especially the case in the spinning of worsted yarn: Arkwright's 'frame'[2] began to be used in the West Riding of Yorkshire in 1787, and within a quarter of a century hand-spinning was being generally superseded in the worsted manufacture.[3] In the woollen manufacture, on the other hand, yarns are spun on mules which came more slowly into general use.

The most important stage in the making of cloth is weaving, and here the power-loom only very gradually ousted the hand-loom. Technical reasons delayed the introduction of steam-looms, which established their predominance much earlier in the worsted than in the woollen branch. Yorkshire in 1835 contained under seven hundred

[1] At the middle of the nineteenth century about 40 per cent. of the operatives were outside the factories.

[2] At the present day worsted yarns are still spun on some modification of the frame.

[3] The general adoption of the combing machine in the worsted manufacture was deferred owing to its technical imperfections for another three decades.

power-looms in woollen weaving and more than four times as many in worsted weaving. Lancashire, however, had eleven hundred power-looms which could weave wool; the west country possessed only a handful. In the middle of the nineteenth century the number of power-looms in the United Kingdom had mounted to over fourteen thousand in the woollen industry and almost forty thousand in the worsted industry; in the closing decade of the century the numbers were respectively sixty-two thousand and sixty-seven thousand. Thus as late as the eighties there still remained numerous hand-loom weavers; and then, except for occasional survivals and revivals here and there, hand-loom weaving—the oldest of the handicrafts—succumbed irrevocably to the machine. In general we may say that the progress of machinery in the woollen and worsted industries was influenced less in the north by the storm of hostility which it sometimes evoked than by the degree of its technical efficiency. In the west country and East Anglia, on the other hand, popular resistance was a determining factor in the maintenance of the traditional methods. 'The opposition that we generally meet with in introducing machinery is so great that until the Yorkshire manufacturers have stolen the article away from us we are almost afraid to introduce it.'

The phenomenal rise of the cotton industry was the outstanding feature of the 'Industrial Revolution' that impressed itself most vividly upon the imagination of contemporaries. Indeed it was mainly responsible for the invention of the phrase, which however appropriate in the case of cotton was certainly misleading when it was subsequently applied to the whole industrial scene—since even after the nineteenth century had run a third of its course the factory population of England, the mill hands, was not much more than 5 per cent. of the working population.[1]

[1] I assume the working population to have been about one-third of the total population. (It is erroneous to compare the mill operatives with the *total* population.)

The cotton industry had already existed for two centuries, although not until the introduction of machinery did it eclipse in importance the staple manufacture which was now rapidly outstripped by its younger and more vigorous rival. Of its place in the national economy something will be said in the following paragraphs: its place in the international economy may be gauged from the fact that in the early decades of the present century it comprised two-thirds of the world's mule spindles, one-fourth of the looms, and half the value of the yarns and fabrics exported from the principal countries. Equally significant for the national economy and the international economy was its influence on English commercial policy, since the 'cotton lords' were mainly instrumental in forcing upon the landlords the repeal of the corn laws.

The growth of the cotton industry can best be measured by the imports of cotton, for it depended entirely upon external sources for its raw material. Here the statistics are astronomical, and they account for the wonder with which the English people viewed the spectacular elevation of an industrial Cinderella to a pinnacle of greatness. At the beginning of the eighteenth century the quantity of cotton was 2 million lb.; in the middle 3 millions; while in the last decade it soared to nearly 30 millions. At the beginning of the nineteenth century it reached 56 millions; in the middle it approached 700 millions; and on the eve of the first world war it exceeded 2,000 millions.[1] The chief source of supply in the eighteenth century was the British West Indies; they sent us 75 per cent. and the United States less than 1 per cent. By the twenties of the following century the United States contributed 75 per cent. of a much vaster amount, and the proportion remained generally constant.[2] Thus the United States became the principal purveyor of the raw material

[1] Imports doubled between 1850 and 1860. In 1938 the quantity was 1,200 million lb.

[2] The American Civil War caused a cotton famine in Lancashire.

for England's leading industry, just as half a century later she became the principal purveyor of England's bread. An important source is also Egypt: fine counts of yarn are spun mainly from Egyptian cotton, and coarse or medium counts mainly from American cotton.

The statistics of the consumption of cotton afford some idea of the effects flowing from the inventions:[1] but they are not a measure of the total value of the finished products. For this we must look at the export trade as a partial criterion, because the practice of ascertaining the output of an industry by means of a census of production started only in the present century. Even export values are not an accurate gauge of the volume of trade owing to changes in the level of prices. (The price of cotton goods fell considerably in the first half of the nineteenth century with the return to the gold standard and the cheapening of production through improved mechanical methods.) Yet two things stand out with crystal clearness. One is that the cotton industry more than any other English industry became an export industry since it depended upon markets abroad for the absorption of no less than three-fourths of its output. The excessive disproportion between the internal and the external market was an element of insecurity which was ignored in the nineteenth century but bore its fruits after the first world war. The other significant fact is that the exports of cotton yarns and piece goods constituted a substantial percentage of total exports—amounting to one-half of the value in the early nineteenth century and about one-quarter a hundred years later.[2] Like the woollen industry in the days of its primacy, the cotton industry thus made a unique contribution to England's oversea commerce. In 1912 an English economist declared that 'the export trade in manufactured cotton goods from this country is in money value the greatest

[1] The inventions did not affect the position of Lancashire as the main seat of the cotton industry. It contains four-fifths of the operatives.

[2] In 1854 cotton exports amounted to £31½ millions (total exports £97 m.); in 1900 to £70 m. (total £291 m.); in 1913 to £127 m. (total £525 m.). In 1938 they had declined to £49 m. (total £471 m.).

export trade in manufactured goods of any kind from any country in the world.' A decade later one of the vicissitudes of fortune, which are visited upon industries as well as upon men, had brought disaster to the cotton mills.[1]

The number of operatives engaged in the cotton manufacture, as in the parallel instance of the woollen manufacture, is not a criterion of its growth; for they were just as numerous in the middle of the nineteenth century (approximately half a million) as they were at the close.[2] Yet in the interval the increased efficiency of machinery doubled the output of yarn and cloth per operative. The absence of vested interests, in contrast with the woollen manufacture, facilitated the introduction of machinery into an undeveloped industry. Moreover the cotton mills resembled the gold fields of California and Australia in their attraction for adventurous spirits, who flocked from other occupations and from all parts of the country to exploit a new source of wealth; and these men showed determination as well as ruthlessness in the haste with which they discarded the traditional methods of production. Arkwright's patents were cancelled owing to obscurities in the specification; Hargreaves was unable to protect his patent from infringement; and Crompton disclosed the secret of his invention without taking out a patent. Thus the water-frame, the jenny and the mule soon became the common property of the manufacturing world. The hard thread spun on the water-frame made it possible to dispense with linen in weaving cotton cloth and to make cotton calicoes; hitherto pure cotton goods had not been manufactured on a large scale. The mule, which yielded a softer and superior yarn than the water-frame, enabled England to produce the finest cotton fabrics, and so the cotton industry was transferred from India to Lancashire. At the present day cotton is spun either on the mule operated by men, or on the ring-frame (a modification of the water-frame) operated generally

[1] See Chapter Fifteen.

[2] In 1851 they numbered 470,000 in Great Britain (372,000 in England and Wales).

by women. While ring spindles spin a greater weight of yarn, mule spindles (which are three times as numerous) spin a better quality.

Machine-spinning rapidly established itself in the cotton industry in the last quarter of the eighteenth century, though hand-spinning survived well into the next century—indeed hand-mules had not wholly disappeared in the eighties. The adoption of weaving machinery lagged considerably behind spinning machinery mainly owing to technical deficiencies. Yet in part also it was due to the stubborn resistance of the hand-loom weavers who clung to their instruments at the price of increasing deterioration in their standard of living, whereas the women and children engaged in spinning were impotent to resist and alternative employment was afforded them by the yarn factories. Cartwright's power-loom was introduced (1791) into the cotton industry by a Manchester firm a few years after its invention; the weavers threatened to destroy the mill and it was burnt down. The set-back deferred further hazardous experiments for a time but in the opening decade of the nineteenth century power-looms began to be erected—in 1806 Manchester had its first steam-weaving factory. In the thirties they began to multiply fast; Lancashire had over sixty thousand and neighbouring counties nearly half as many. The number of hand-loom weavers at the same period is a matter of conjecture; it may have been as high as two hundred thousand or more. Speaking generally, half the workers in the cotton industry were outside the factory in 1835; about one-third still remained outside in the middle of the nineteenth century; and the domestic weavers had not been completely absorbed at the turn of the century. An illuminating fact which shows that the traditional organization of industrial society only slowly yielded ground even in the classic hearth of the 'Industrial Revolution.'

'A pretty engine' was the designation applied by an eminent engineer, Smeaton, to Watt's steam engine. He declared

that neither the tools nor the workmen existed to manufacture so complex a machine with sufficient precision. Boulton conveyed the comment to his partner who had suffered painful experience of its truth in his protracted experiments; and it required at the time (1776) exceptional faith to believe that these handicaps would be successfully overcome. The tools used in the construction of the engines were rude—with the result that the machines were constantly breaking down; and (as Boulton also complained) 'the want of proper men to work our engines' brought discredit upon the new contrivances. The introduction of the steam engine and of power-driven machines was thus delayed by imperfect workmanship; and the creation of an engineering industry, which could cope with the requirements of a mechanical age, was the necessary complement of the great inventions. Without it machinery would have remained a pretty toy—an intellectual curiosity like the visionary projects of Roger Bacon and Michelangelo. It was the mechanical engineers of the nineteenth century who made possible the practical application of the ideas which had been conceived in the eighteenth century.

In order to lay the foundations of an engineering industry, the first essential was the provision of trained mechanics. When in the middle of the eighteenth century Campbell wrote an account of the various industrial occupations of his day, he referred to engineers who were employed in making engines 'for raising of water' to drain mines or supply reservoirs; but he added that 'the business is at present in few hands.' It is noteworthy that Brindley who inaugurated the era of canal navigation was a millwright, and that Telford a road-maker was a stone mason; while textile manufacturers were often forced to construct their own machines, employing for the purpose all kinds of artisans. The second essential was to devise machine tools. At the end of the Napoleonic wars, according to a contemporary William Fairbairn, 'the whole of the machinery was executed by hand. There were neither planing, slotting nor shaping

machines; and with the exception of very imperfect lathes and a few drills the preparatory operations of construction were effected entirely by the hands of the workmen.' As a consequence the machines were unsatisfactory and their defects caused frequent stoppages of work. The indispensable preliminary therefore, if machines were not to be deficient in the adjustment of their parts, was the fashioning of automatic machine tools designed to ensure precision of measurement and fitting. With this important development—the making of machine tools to make machinery 'with a degree of accuracy which the unaided hand could never accomplish'—are associated the names of numerous pioneers. When William Fairbairn delivered his presidential address to the British Association in 1861 he was able to claim that 'everything is done by machine tools,' to whose exactitude 'our machinery of the present time owes its smoothness of motion and certainty of action.'

The way was now prepared for the rise of engineering firms which specialized in machinery and so relieved textile firms of an irksome responsibility. In the course of the nineteenth century the scope of engineering science was widely extended, and to-day embraces generally the manufacture of finished articles composed of metal—machinery, prime movers, mechanically-propelled vehicles, tools. An industry limited in the eighteenth century to engines for pumping water out of mines became the pivot of all production in fields, factories and workshops which used power-driven machines, of all forms of transport which did not depend on horses or wind, of all lighting and heating which required gas or electricity. Its position in the national economy is also indicated by the fact that between the two world wars nearly one and a quarter million persons were engaged in its various branches.[1]

The engineering industry was the youngest of the great industries which have dominated modern economic life. It

[1] The census of 1851 entered 48,000 'engine and machine makers' in Great Britain (42,000 in England and Wales).

was virtually the creation of the 'Industrial Revolution' since it was called into existence by the substitution of steam-power for water-power, animal-power and human-power. Moreover it utilized the products of the metal industries, especially iron and steel, so that its progress was governed by the advance made in metallurgy. It thus affords an admirable illustration of the extent to which the various branches of the national economy—iron, steel, coal, engineering and the whole range of manufacturing processes—served to react upon each other at every phase of their evolution. Accordingly we notice next the history of iron and steel.

The immense expansion of the iron industry—where the number of workers increased from eighty thousand in the middle of the nineteenth century to over half a million seventy years later[1]—was rendered possible by the use of mineral fuel in place of wood in all stages of production. The result was that England, equipped with an abundance of coal, ceased to be dependent for iron upon the countries which had an abundance of timber. On the contrary she sent large quantities of iron abroad in addition to providing the vast amount needed at home for machinery, railways and shipping. In pig iron the giant strides of the statistics recall those of cotton. It is estimated that in 1740 the output was 17,500 tons; the beginning of the nineteenth century registered a tenfold increase with the demand for munitions of war; in the middle of the century it rose to $2\frac{3}{4}$ millions; at the end it reached 8 millions; on the eve of the first world war it attained its maximum of $10\frac{1}{4}$ millions; and then after the war came (as with cotton) the turn of the tide.[2] England was now in a position to export both pig and bar iron to other nations far in excess of the quantity which she took from them: high grade Swedish iron, however,

[1] Great Britain. For the use of coal in the iron industry, see Chapter Seven.

[2] On the eve of the second world war the quantity was $6\frac{3}{4}$ million tons. (These statistics refer to the United Kingdom.)

still remained in demand for making crucible steel. Yet while imported iron formed only a negligible fraction of her total consumption, she became increasingly dependent upon imported ore which was twice as rich in metal as native ore. In the early seventies imported ore was only one-thirteenth of the amount raised at home: in 1913 it had risen to one-half and this meant that 50 per cent. of the home production of pig iron was obtained from foreign (mainly Spanish) ore—for the latter though smaller in quantity had the same metal content as the much larger domestic supply.[1]

An age of steel succeeded an age of iron; and the transition robbed England of the metallurgical pre-eminence which she had enjoyed for the first three-quarters of the nineteenth century. Steel had notable advantages over wrought iron, in which we had hitherto excelled—it was harder, it was stronger, it was easier to machine, and it was cheaper because it could be produced on a larger scale. Thus it came to displace wrought iron in the metal-working trades except for special purposes. In the seventies our production of steel was about half a million tons;[2] on the eve of the first world war it had multiplied fifteen-fold, but it was only one-tenth of the world production of steel which had risen from one million tons to no less than 75 millions. Our proportion of the world production of pig iron similarly declined from nearly one-half to about one-eighth. England was outdistanced by her competitors, the United States and Germany, for two main reasons. The Thomas-Gilchrist process[3] facilitated the use of phosphoric iron ores in America and in Lorraine. Moreover

[1] The quantity of iron ore produced in the United Kingdom in 1938 amounted to nearly 12 million tons. The metal content averaged 30 per cent.

[2] The production of steel in the United Kingdom was (in thousand tons)—110 (1868), 329 (1871), 1,778 (1881), 4,904 (1901), 6,462 (1911), 10,398 (1938).

The quantities of steel produced by the main processes in 1938 were as follows (in thousand tons)—

Converter (Bessemer)		*Open Hearth*		*Electric*
Acid	*Basic*	*Acid*	*Basic*	
164	431	1,665	7,731	223

Thus about three-fourths were produced by open hearth basic.

[3] See Chapter Seven.

England had been first in the field of metallurgical discoveries and she paid the penalty of the pioneer in being saddled with obsolete plant, while those who started later were enabled to install the most up-to-date methods. Not until the depression of the eighties did acute competition from abroad compel the primary producers to scrap machinery and embark upon the capital expenditure entailed by the extended size of the industrial unit. Nevertheless the exceptional position which the English makers of wrought iron had once occupied was denied to the English makers of steel.

The iron industry resembles the woollen industry before the nineteenth century in its dispersed and migratory character. Its centres have risen and fallen not haphazardly but in accordance with its requirements in fuel and material. At first it was established in the midst of forest regions, for instance Sussex, where it procured wood for making charcoal. Eventually the local timber supplies were exhausted, the iron works were starved out, and they moved to the midland counties. When mineral fuel replaced wood, and the blast furnace was worked by the steam engine instead of by water-power, the ironmasters were relieved of the necessity to cling to forests and streams, and they could erect their furnaces elsewhere. South Wales and Staffordshire grew important—in 1830 they accounted for four-fifths of the total production of pig iron. Those seats of the iron industry were located near the coal-fields because it was cheaper to carry ore to coal, which was greater in weight. Then the situation was reversed. Improvements in the blast furnace considerably lessened the consumption of coal; the Bessemer process demanded non-phosphoric ores which were found in Cumberland and Furness; and the quantity of imported ore rapidly increased. For these reasons the steel-makers in the third quarter of the nineteenth century moved to the north-east and the north-west coasts.[1] Thus changes in the geographical

[1] In 1913 the north-east coast accounted for three-eighths of the pig iron produced in Great Britain; South Wales and Staffordshire had sunk to about one-sixth.

distribution of iron and steel works corresponded to the advances made in metallurgy.

The manufacture of finished articles in the metal industries was localized in particular districts. Sheffield was the historic centre of the cutlery trade, famed for hundreds of years for its knives. In the first half of the nineteenth century its population trebled. The small masters, threatened with extinction by the rise of the new industrial system, managed to survive by hiring the use of power-driven machinery; and they 'amazingly multiplied' (as a contemporary remarked) though cutlery factories were now making their appearance. Even to-day machinery has not completely displaced handicraft operations. A pocket knife may be handled forty times in the various processes which it undergoes, a table knife eighteen times, a pair of scissors thirty-two times. One notable development with which Sheffield is associated is the manufacture of 'special' steels, that is, alloys of steel which contain other minerals (for example stainless steel). This has benefited the engineering industry by providing it with tools suitable for specific purposes such as high speed. Birmingham had been for several centuries engaged in fashioning small metal wares. The traditional skill of its artisans and the proximity of coal and iron, coupled with freedom from gild restrictions and immunity from the disabilities imposed on Nonconformists in corporate towns, combined to attract a growing population which in fifty years (1801–1851) more than trebled. It furnished an extensive variety of goods which embraced articles of brass, guns, jewellery, buttons and other staple products. Machinery came far later to the finishing branches in the light metal trades than it did to the material on which they worked. There were exceptions as in the case of pin-making, but in general much of the labour was manual. A French observer wrote that machinery was only an accessory of manufacture and that everything depended on the skill and intelligence of the operative. We have already seen how the wide adoption of power was delayed until the last quarter of the nineteenth

century.[1] Indeed the nail industry—where fifty thousand nailers (men, women and children) are said to have been occupied in Staffordshire in the third decade of the century—was still producing hand-made nails under the domestic system in the closing decade.

Coal in the nineteenth century was 'king.' It enjoyed the primacy among English products once held by wool. Its uses already extensive in earlier ages were now greatly augmented. Apart from the domestic requirements of a rapidly increasing population, coal was needed for smelting iron ore with which to make machinery, for driving machinery by steam-power, and for railways and shipping to distribute the fruits of machinery in markets at home and abroad. The importance of coal can scarcely be over-estimated. It was responsible for some of the principal developments connected with the 'Industrial Revolution.' The original purpose of the steam engines was to drain the coal-mines: the original purpose of the railways was to link up the mines with the coast: the original purpose of the canals was to convey coal to an inland market. Coal became the basis of every industry and the life-blood of transport both by land and sea; it furnished a very valuable export; it enabled ships to carry outward cargoes and thereby reduced freight costs for return cargoes of food and raw materials; its waste products were being turned to various industrial projects.

The immense growth of coal-mining kept pace with the demands made upon it. The statistics of the upward trend are impressive even in an age pre-eminent for its statistical peaks. At the beginning of the eighteenth century the estimated annual output was about $2\frac{1}{2}$ million tons; in the middle it was nearly twice as much; and at the end it was four times as much. Official returns do not actually commence until the fifties of the following century when the output rose above 60 million tons; it soared to 225 millions in 1900

[1] See Chapter Seven.

and to 287 millions (its maximum) in 1913.[1] No anxiety was felt that the supply of coal might soon approach exhaustion. The apprehension expressed in the seventeenth and again in the nineteenth century had been allayed by the estimate that the coal reserves of the United Kingdom amounted to 190,000 million tons. The quantity shipped abroad grew until in 1913 it was more than a quarter of the entire production, and it was responsible for an increasing proportion of the value of total exports.[2] The number of all persons engaged in coal-mining also expanded rapidly at the same time: it approached 200,000 in the census of 1851 and was five times as large in 1913.[3] The annual average output per person occupied in the industry was 260 tons in 1913 and 287 tons in 1938. Variations in coal output are determined by circumstances such as the age of the mine, the greater depth and difficulty of the seams, the reduction of hours, the increase of workers at the surface of the mine. Moreover marked differences in the efficiency of management and in the adoption of mechanical equipment were inevitable when there existed nearly 2,500 coal-mines belonging to approximately 1,400 separate undertakings.[4] Of these about one-half employed each a hundred or fewer persons and produced 2 per cent. of the output; one-quarter employed each more than a thousand persons and produced over 80 per cent. of the output. Mechanical methods in mining found their way into the pits by stages—first for winding, then for hauling the coal in conveyors from the hewer to the bottom of the shaft, but virtually not until the

[1] In the United Kingdom. (The coal output for England and Wales alone was 245 million tons.) On the eve of the second world war it was 227 m. in the United Kingdom (and 197 m. in England and Wales).

[2] In 1860 coal exports were $7\frac{1}{3}$ million tons (out of a total production of 80 m.), and they accounted for $2\frac{1}{2}$ per cent. of the value of total exports. In 1913 they were 77 m. (out of 287 m.)—10 per cent. of the value of total exports. In 1938 coal exports had declined both in quantity (36 m. out of 227 m.) and in their share of the value of total exports (8 per cent.).

[3] In 1851 the number in England and Wales was 185,000; in 1913—965,000 (and 1,105,000 in the United Kingdom); in 1938—701,000 (and 791,000 in the United Kingdom).

[4] In 1924.

present century for hewing.[1] The crux of the situation lies in the fact that a coal-mine is a wasting asset; the duration of its productivity is limited, and when it is worked out it is closed. This affects capital expenditure for equipment on mines approaching extinction.

An increasing measure of state regulation was applied to coal-mining in the course of the nineteenth century: it has culminated in the nationalization of the mines in our own day (1947). It was largely due to the policy of the miners' unions, which sought to achieve their purposes by legislative action—it is significant that the first two labour leaders to sit in Parliament were miners. The intervention of the state was also necessitated by the bitterness of the relations between the mine-owners and their employees. No other industry has equalled coal-mining in the intensity of labour unrest. It has been officially estimated that the aggregate duration of disputes 1907–25 (excluding the war years), reckoned in working days, was greater than in all other industries combined; and out of the coal strike of 1926, which lasted for seven months, developed a general strike.[2] The environment in which the colliery workers lived was not conducive to good feelings towards their employers. Housing conditions were often deplorable. The old mining village, according to one description, 'consists of cottages poorly constructed, frequently overcrowded, with inadequate sanitary arrangements.' Friction over wages was chronic. Under one system which was widely prevalent, wages fluctuated according to the selling price of coal, rising and falling on a sliding scale. Under another system, adopted after the first world war, wages and profits were assigned fixed proportions of the proceeds. State interference in the coal-mines began with the prohibition of women's work underground and the restrictions on child labour.[3] These were an extension of factory legislation to the special conditions of the mines, but other

[1] Coal-cutting machines accounted for 1½ per cent. of the total output in 1901, for 19 per cent. in 1924, for 42 per cent. in 1933.

[2] See Chapter Fourteen.

[3] See Chapter Ten.

measures went beyond the factory code—the legal right conferred on the miners to appoint their own checkweighers in order to ensure correct weighing of coal, the curtailment of the working day for adult males, and the institution of a minimum wage in a highly organized industry.[1] The severe depression in coal-mining between the two world wars led the government to undertake a notable departure from *laissez-faire* traditions when it set up machinery for restricting output, regulating prices, promoting amalgamations,[2] and establishing public for private ownership of mineral rights.[3] Finally in 1947 the coal-mines passed into the hands of the state.

Two industries, gas and electricity, did not exist before the nineteenth century—they represented new forms of power, lighting, heating and traction; while a new textile (rayon)[4] foreshadowed an age in which natural products would be supplemented or replaced by artificial substitutes. The use of gas as an illuminant started about 1800 when William Murdock lit up the works of Boulton and Watt at Soho.[5] It was adopted for street lighting, introduced into the home both for lighting and heating, and in the sixties served as the fuel for internal combustion engines. Experiments in electricity were made near the end of the eighteenth century, but so long as it was generated by a battery the quantity was restricted; the dynamo provided ample generation by mechanical methods. Of all human discoveries electricity has the widest range in the uses to which it can be turned: its potentialities indeed seem infinite. It provides homes with the means for lighting, heating and cooking. It furnishes industry with power which can be transmitted over long distances, thus facilitating the dispersion of factories fed from a remote source (a power station) in

[1] See Chapter Ten.
[2] The act of 1930.
[3] The act of 1938.
[4] For rayon, see Chapter Fifteen.
[5] Murdock used gas for lighting in his own house in the last decade of the eighteenth century and at the Soho works in the first decade of the nineteenth century.

place of the former urban concentration. With it trains and trams can run, and instantaneous communication can be achieved by telegraph, telephone and wireless. Nevertheless the progress of electricity was retarded by the fact that gas was first in the field and that coal was cheap and abundant. It was utilized for telegraphy in the thirties and for the telephone in the seventies but for other purposes only on a small scale in the eighties; its extended application for domestic lighting and power supply was delayed until the closing decade. Electric traction also came near the end of the nineteenth century. The omnibus had made its appearance in the streets of the metropolis in the twenties and the tram in the sixties; the one was introduced from France, the other from America. Both were horse-drawn but steam trams and steam omnibuses were not unknown. In the opening years of the present century electric trams were displacing horse and steam trams, though Oxford still retained its horse trams until 1914. Steam, moreover, was being challenged on its classic hearth since the London underground railway was electric and surface trains were beginning to be electrified. To meet all these varied uses of electricity there grew up a very considerable industry engaged in the manufacture of generators, motors, lamps, stoves and other domestic apparatus.

A dual interest attaches to the silk industry. It preserved the system of state regulation of wages as late as the third decade of the nineteenth century—the solitary survival of a practice once the law of the land. Further it was the only important manufacture which proved unable to dispense with protection. In the eighteenth century foreign silk goods had been prohibited; but when the free trade movement started on its course no industry could hope to remain unaffected. However in the case of silk the wind was tempered to the shorn lamb, and prohibition was replaced in 1824 by the maximum possible duty of 30 per cent. At the same time the high duty on imported raw silk was reduced

from 5s. 6d. per lb. to 3d. and the reduction in the cost of the material together with improved machinery in the throwing mills enabled English producers to lower their prices. Subsequently the Cobden Treaty with France (1860) abolished the duty on foreign silk goods, and native textiles were exposed to the full blast of alien competition. As a result imports of silk broadstuffs in the early years of the twentieth century were nearly five times as large as home production, which gave employment to but one-fourth of the number engaged in it fifty years previously. Coventry, one of the principal centres, turned to the making of bicycles in which it gained renown, thus affording an apt illustration of the tendency of free trade to divert the national energies into the most fruitful channels. Yet one branch which was a recent development prospered, namely spun silk, a waste product whose potentialities were successfully exploited by Lister the inventor of a combing machine. As in other textiles, machinery was introduced first into the preliminary processes—in the case of silk this was the throwing process where factories using power were erected half a century before the advent of cotton spinning factories; but hand-looms continued to be kept by Macclesfield firms in the eighties. Thus side by side with the factories there persisted a domestic system in which the 'master' who owned the silk gave out the material to an 'undertaker' who employed journeymen to do the weaving. The 'undertaker' took one-third—'to repay him for the winding, warping, shoproom and looms' (so it was explained)—and the weaver two-thirds of the price paid by the 'master.' The adoption of power-loom weaving was stimulated by the removal of protection, which made it all the more necessary to introduce up-to-date methods of production.

The hosiery industry was at first confined to the manufacture of stockings ('hose'), although it has now other products knitted in the same way as stockings by a chain of loops—in contrast with cloth which is woven (interlaced)

with warp and weft. It enjoys the distinction of being the first textile in which the processes were revolutionized by an English invention, the knitting-frame of William Lee in the reign of Elizabeth. This was a hand-frame and it was not generally displaced by power-frames until the latter part of the nineteenth century. Another textile, linen, never took firm root in England; instead it became established in Ireland which, as Strafford had planned in the early seventeenth century, was thus compensated for the discouragement of a woollen industry that could not have competed successfully with its English rival.

Any survey of English industries must include a reference to building and earthenware. Building ranks among the most ancient of economic activities, and it has afforded scope—more especially in edifices consecrated to religious uses—for some splendid manifestations of human art. Alike in its materials, as in architectural form, building has evolved through the ages; but the old materials were never completely superseded by the new, and mud huts existed together with structures of timber, stone and brick, while in the past fifty years the steel-frame building has made its appearance. Campbell's *The London Tradesman* (1747) shows that in his day there was a class of master builders, doubtless recruited mainly from bricklayers, who either work for others or 'launch out into building projects of their own which frequently ruin them.' It was those speculative builders who found in the rapid urbanization of the nineteenth century their opportunity to create a jerry-builder's paradise though the conditions were far from being all of their own making. The number of workers engaged in building was nearly half a million in the middle of the nineteenth century[1] and twice as many at the end.

Another ancient occupation was the potter's craft: among others the museums of Peking, Athens and Constantinople exhibit treasures of surpassing beauty. In England a manu-

[1] In Great Britain. (It was 400,000 in England and Wales.)

facture, which had already made considerable headway, flowered into the artistic productions of a great master-potter who built upon the foundations laid by his predecessors. Josiah Wedgwood (1730–95) at the age of twenty-eight set up on his own, and in the course of a highly successful career he erected a large earthenware factory together with a village for his workmen which he named Etruria. A monument to his memory claims that he 'converted a rude and inconsiderable manufactory into an elegant art and an important part of national commerce;' while his biographer asserts that 'dissatisfied with the clumsiness of the ordinary crockery of his day, he aimed at higher finish, more exact form.' It is at least unquestionable that the technical and ornamental improvements which Wedgwood effected in English earthenware carried his products all over the Continent.

The changes in the structure of English industry during the nineteenth and twentieth centuries have been less revolutionary in scope than those which occurred in the manufacturing processes. Neither factory organization, nor large-scale production, nor joint-stock companies, nor integrated concerns, nor combines to suppress competition, were new when Watt's steam engine was given to the world. The changes that took place were more in the nature of an acceleration of tendencies already at work. In the aggregate they have served to modify the character of English society, but the transformation has been the result of piecemeal and gradual developments parallel to those which at all stages of economic evolution have continuously and subtly altered the aspect of the industrial landscape. The main features with which we are here concerned are the enlargement of the size of the business

[1] The fine white English earthenware 'was just reaching perfection.' Chelsea china in the middle of the eighteenth century is described as 'the finest ever made in England.' This was porcelain made of soft paste. Spode and others manufactured a porcelain made of hard paste and bone ash.

unit, the increase of joint-stock companies, the trend towards the elimination of competition, and the growth of the factory system.

One of the misconceptions about English economic life arises from the belief that small-scale production was the invariable practice before the epoch of the great inventions, and that in the nineteenth century it was almost entirely superseded by large-scale production. In fact we think of modern industrial society in terms of the mass creation of standardized articles and the assemblage of thousands of wage-earners under the same roof. Attention has already been drawn to the error of the view that large-scale production was unknown or exceptional in earlier times: great undertakings constituted a recognized feature of the extractive and manufacturing industries, and in a variety of occupations there existed a class of capitalist employers engaged in a substantial way of business. Here it remains to consider how far the conventional picture corresponds to the realities of our own age.

It is undeniable that enterprises giving employment to vast numbers of workers are common to-day. Nevertheless the 'representative firm,' if any was found to exist, would diverge considerably from the pattern usually conceived of it. Actually there is an indefinite gradation of firms whose staffs range from a handful of employees to many thousands. This can best be shown, first, by examining the situation as it prevailed at the middle of the nineteenth century. Fortunately evidence is available, for the census of 1851 asked employers to state the number of their operatives. The inquiry was answered by nearly 130,000 masters who had almost three-fourths of a million people on their pay-roll. The returns are illuminating because they serve completely to dispel the notion of a society dominated by large producers. About one-third kept no hired workers or made no return of any, and simply stated that they were masters. Of the remaining 87,000 employers there were (approximately) 76,000 with 1 to 9 employees, 9,000 with 10 to 49 employees, 1,000 with

50 to 99 employees, 900 with 100 to 349 employees, and 228 with 350 or more employees (the last category had in all 85,500 employees).[1] Under fifty persons were employed by 605 out of 1,188 cotton manufacturers; by 853 out of 976 woollen manufacturers; by 84 out of 127 worsted manufacturers; by 161 out of 236 silk manufacturers; by 3,157 out of 3,322 builders; by 609 out of 677 engine and machine makers; by 267 out of 310 earthenware-makers; by 6,741 out of 6,752 tailors; by 10,285 out of 10,354 shoemakers; by 1,976 out of 1,991 millers; by 5,048 out of 5,049 blacksmiths. Three hundred or more persons were employed by 136 cotton, 23 woollen, 13 worsted, 16 silk, and 10 earthenware manufacturers, as well as by 6 builders, 17 engine and machine makers, and 3 shoemakers.[2]

We may next look at the results of an investigation conducted nearly a hundred years later (1935). It concerned over 53,000 firms engaged in industry, of which each hired over ten persons, with a total of approximately seven and a quarter million employees. Rather more than one-half kept less than fifty, but they accounted for only one-ninth of the total number and produced only one-tenth of the total net output. Firms comprising less than five hundred accounted for nearly half the total employment. About 1,000 firms had a thousand and over; as few as 100 firms had five thousand and over. A closer analysis of the figures

[1] The employers in England and Wales who made a return in 1851 numbered 129,002 (of whom 41,732 stated only that they were masters); the employees numbered 727,468.

Number of men	*Number of employers*	*Number of men*	*Number of employers*
1	24,345	30–39	878
2	19,243	40–49	514
3	11,177	50–74	681
4	7,624	75–99	348
5	4,108	100–149	390
6	4,178	150–199	236
7	2,093	200–249	135
8	2,044	250–299	88
9	1,140	300–349	65
10–19	5,826	350 and upwards	228
20–29	1,929		

[2] See Table on following page.

Total number of Employers	*Number of Employees*																				
	1	2	3	4	5	6	7	8	9	10–19	20–29	30–39	40–49	50–74	75–99	100–149	150–199	200–249	250–299	300–349	350 *and upwards*	*No men or number not stated*
Blacksmiths, 7,331	2,470	1,565	555	217	88	47	27	22	11	31	12	2	1	0	1	–	–	–	–	–	–	2,282
Builders, 3,614	151	266	278	321	198	312	154	193	85	701	271	126	101	77	36	24	9	8	5	1	5	292
Cotton Industry, 1,670	46	35	24	35	38	35	18	20	14	124	104	55	57	85	87	97	82	57	39	23	113	482
Earthenware Industry, 378	36	32	22	27	18	19	9	12	5	31	23	21	12	3	4	15	4	2	5	3	7	68
Engine and Machine Makers, 837	77	75	68	63	38	45	27	23	31	90	30	27	15	21	13	6	3	3	5	3	14	160
Millers, 2,394	664	483	272	178	88	75	47	40	22	84	15	7	1	9	4	2	–	–	–	–	–	403
Shoemakers, 17,665	3,444	2,572	1,363	867	432	492	192	191	107	444	115	46	20	31	7	12	9	5	2	0	3	7,311
Silk, 272	15	15	15	16	14	18	3	4	2	22	15	13	9	9	20	14	7	5	4	3	13	36
Tailors, 10,991	2,330	1,522	900	581	275	309	156	152	83	343	61	22	7	10	0	1	–	–	–	–	–	4,239
Woollen Industry, 1,107	109	90	74	73	47	78	17	18	12	156	94	52	33	28	13	23	26	8	2	2	21	131
Worsted Industry, 154	6	8	7	4	5	1	1	5	1	20	13	4	9	9	3	9	6	3	0	1	12	27

reveals instructive information on the distribution of the wage-earning population and the scale of production at the present day.[1]

It is evident that after a century and a half of power-driven machinery and factories the small producer in England has not been expelled from the industrial field. He still holds his own, just as the 'one-man' business continues to survive in the face of the competition of the large stores. A more intimate sense of the modern position can be conveyed better by a brief review of particular branches of industry than by a bare statistical abstract. In coal-mining about one-half of the undertakings counted each a hundred or fewer workers. In iron and steel there is a marked contrast between the primary and finishing processes. The blast furnace increased its capacity from an average annual output of 3,500 tons in 1840 to 30,000 tons in 1913. Some of the ironmasters of a century ago seem to have had several hundred men; but the new steel works involved a much greater concentration of capital. A score of firms in recent decades was responsible for nearly three-fourths of the output of iron and steel; while an integrated concern with coal and iron mines, furnaces and manufactures may employ as many as sixty thousand hands. The light metal industries present a very different picture. Here there remains even to-day plenty of room for the small producer. He has persisted in the cutlery trade side by side with factory establishments; in jewellery the average firm numbers twenty-five persons; in many of the hardware trades the unit of production has kept small.

Among textiles the cotton industry was conducted from

[1]*No. employed*	*No. of firms*	*No. employed*	*No. of firms*	*No. employed*	*No. of firms*
11–24	17,609	300–399	1,084	1,500–1,999	198
25–49	14,147	400–499	606	2,000–2,499	111
50–99	9,459	500–749	865	2,500–2,999	55
100–199	5,814	750–999	405	3,000–3,999	80
200–299	2,218	1,000–1,499	414	4,000–4,999	51
				5,000 and over	101

These figures for 1935 are taken from Leak and Maizels in *The Journal of the Royal Statistical Society*, N.S., vol. 108, parts I–II.

the start on a large scale in the spinning factories which housed the water-frame. In the early years of the nineteenth century a firm might employ hundreds and sometimes more than a thousand mill hands. However the distinctive feature of cotton undertakings is their degree of specialization. Two-thirds of the operatives are in the service of firms carrying on either spinning or weaving but not both together; and each branch contains hundreds of concerns varying in size. This feature of the cotton industry is shared by the worsted industry where combing, spinning, weaving and finishing are usually (though not invariably) organized separately by independent firms. In the woollen industry, on the contrary, all the processes are frequently in the hands of the same firm, and the material does not change ownership at successive stages of manufacture. The woollen business is managed as a rule on a smaller scale than the worsted business and accordingly it comprises fewer employees: between the two world wars nearly one-fourth of the establishments had less than twenty-one operatives, and nearly two-thirds accounted for barely one-sixth of the total number of workpeople engaged in the manufacture. The engineering industry, in marked contrast with the United States, is also characterized by small-scale production although there are some substantial undertakings. In the middle of the nineteenth century two-thirds of the 'engine and machine makers' employed under ten men: less than a score reached three hundred or more.[1] In recent years an official report has spoken of 'the very large number of relatively small firms that exist—each with a separate organization, separate establishment charges, separate buying and selling arrangements, and each producing a multiplicity of articles.' In shipbuilding we may find a builder with over five hundred on his pay-roll early in the nineteenth century but the average unit was still small, and the absence of uniformity has persisted down to the present day.

In general it appears that at all times and in all industries

[1] In the eighteenth century Boulton employed about 700 persons.

business units of varying sizes have prevailed. There exist many large enterprises yet in number (though not in volume of employment) they are often exceeded by small manufacturing firms. The increase in the scale of operations is responsible for a notable development in industrial technique. There is nothing new in principle about the mass production of standardized goods: it was the aim of the legislature for hundreds of years to force standardization upon the makers of textiles. Modern engineering science has facilitated—as well as necessitated—the application of mass production methods to an unparalleled extent. The automobile industry affords the most conspicuous example of 'flow production,' in which articles under construction travel along a conveyor and receive their component parts from each mechanic in turn until the process of assemblage is completed.

The growth in the size of an undertaking is dependent upon the concentration of capital. An entrepreneur seldom has the resources which will enable him to embark upon an extensive outlay: he must therefore seek a loan from a bank or form a joint-stock. The bank provides as a rule short-term advances for the purpose of supplying circulating capital. The joint-stock company, unless it is a private firm confined to a few persons, makes it possible to draw fixed capital from a wide field of investment. The joint-stock system, as we have seen, is at least as old as the sixteenth century; but its adoption was retarded partly by the Bubble Act of 1720 which required every joint-stock company to possess a charter, and partly by the indefinite liabilities of shareholders. The Bubble Act was repealed in 1825; while the privilege of limited liability was expressly conceded in 1855 (with some exceptions) and made general in 1862.[1] Family businesses at once began to utilize the much coveted opportunity to turn themselves into joint-stocks, and the practice continued in later decades. In other cases any person

[1] Limited liability had been established for certain trading companies in the seventeenth century.

was at liberty to purchase shares with his liability limited to the extent of the shares which he held.

The importance of joint-stock companies in the national economy is impressively demonstrated by the fact that between 1885 and 1925 the capital employed in them increased over nine-fold.[1] They have been one of the prime causes of the expansion in the size of the business unit. The ability of the general public to invest savings in industry, in commerce and in transport, enables a concern to determine the scope of its operations without being unduly hampered by financial stringency. The enlargement of an undertaking is brought about in different ways. It may be horizontal—that is, it extends the field, without varying the nature, of its processes. It may be vertical—that is, it takes in other stages of production. Thus in iron and steel a company may own collieries and iron mines, so that it can charge its furnaces with its own fuel and ore to make the steel which it converts into finished products. Integration is also a feature of the woollen industry—in contrast with worsted and cotton where independent firms specialize in a single process. Other consequences of the joint-stock system must be noticed. For one thing, the risks of an industrial or commercial enterprise are spread over a greater number of people. For another, a joint-stock company can effect economies in the costs of production by widening the scope of its activities rather than by cutting wage rates. During the 'Industrial Revolution' the low wages, long hours and insanitary conditions of the early factories were, partially at least, due to the inventions being largely exploited by men who had sprung from the ranks and were often hampered by inadequate means. On the other hand the personal relationship, which can subsist between employees and an employer

[1] From £482 millions to £4,470 m. Allowance must be made for the change in the value of money. Moreover when private firms are converted into a joint-stock there need not necessarily be any investment of fresh capital. On the eve of the second world war the number of joint-stock companies registered in England and Wales was 13,018 public companies (with a paid-up capital of £3,801 m.) and 134,843 private companies (with a paid-up capital of £1,741 m.).

who both possesses and conducts the business, becomes impossible when possession is vested in hundreds and even thousands of shareholders. Hence the result of joint-stock companies has been, as it were, to make capital impersonal and to deepen the cleavage with labour. Lastly the effect of a joint-stock is to separate the ownership of capital and the functions of management. The capitalist who furnishes the resources, and the entrepreneur who directs the undertaking, cease to be identical when the ownership of capital grows diffused. This does not mean, however, that the real control of a company passes into the hands of its managerial staff—a conclusion which has been too hastily drawn. Its policy may be shaped by a shareholder or group of shareholders either by reason of the extent of their holding in the company or their ability to influence the voting of other shareholders.

We are accustomed to think of the nineteenth century as the age in which the spirit of competition reigned supreme. The truth is that 'pure' competition has rarely if ever existed, and even 'imperfect' competition has often been conspicuously absent. There are clear indications to support Adam Smith's statement that 'people of the same trade seldom meet together but the conversation ends in some contrivance to raise prices.' We have seen that compacts to restrict output and control prices have a continuous history from the opening of the seventeenth century when they first began to excite adverse comment. In the nineteenth century there is similar evidence of combinations. We hear of associations to lay down the tariffs of fire insurance offices (1858) and to determine the price of soap (1867); witnesses before parliamentary committees in the seventies and eighties testified that price agreements were 'a universal practice' or 'the practice of nearly all the main trades.' We even meet in the eighties with an arrangement of English, Belgian and German makers of steel rails to divide the export trade: the international scheme was short-lived but it was followed by others to fix prices, curtail output and delimit

marketing areas. In the present century an official report has drawn attention to the presence of over five hundred associations of producers in this country 'all exerting a substantial influence on the course of industry.' One object which all combinations—extending from informal understandings ('gentlemen's agreements') to formal contracts or amalgamation into trusts—share in common is to regulate output and maintain or raise prices. Nevertheless numerous industries and services still remain largely immune from associations, such as textiles, building (including shipbuilding), boots and shoes, automobiles, etc.

In recent decades public opinion in England has grown less unfavourable to industrial combinations. It is recognized that concerns in which a great amount of fixed capital is invested and overhead charges are proportionately heavier, and in which price-cutting militates against the maintenance and replacement of expensive equipment, may be constrained to enter into agreements that will provide an assurance of stable prices and regular output, as well as facilitate co-operative research, diminish the costs of distribution and promote export selling agencies. Furthermore it may be found necessary to eliminate the redundant capacity of an industry by extinguishing small and inefficient plants; and under the name of rationalization this is widely advocated as a means of avoiding economic wastage. Accordingly between the two world wars the government itself took steps to bring about fusions in the coal, iron, steel and shipping industries, and it exerted pressure upon undertakings to reorganize themselves in more efficient units, cheapen costs of production, and limit competition. Especially notable was the amalgamation of the railways into four large groups and of the joint-stock banks into five companies with official encouragement. The reconstitution of industries and services on a basis which involves co-operation and the concentration of resources measures the vast difference in the standpoint of our own times and of a hundred years ago towards competition.

Perhaps the most convincing demonstration that English economic society has grown by the process of unceasing change and adaptation, in which the old is blended almost imperceptibly with the new, is to be found in the persistence of the usages and practices of by-gone ages. Throughout the nineteenth century and down to the present day there have survived traces of two earlier stages in industrial evolution —one when the consumer was his own producer; the other when he came into direct contact with the producer whom he supplied with material. These two historic stages had once been widely prevalent. Thus Eden writing in 1797 declares that country folk in the north of England manufactured almost every article of dress except shoes and hats. Linen thread and woollen yarn, after being spun at home, were sent to weavers and dyers 'so that almost every family' had an annual supply of linen and woollen cloth. Doubtless in other parts of England the same custom had prevailed in rural districts where the services of the local professional weavers were requisitioned whenever the weaving was not done in the home. The first stage has not yet altogether disappeared, for instance, bread may be baked or jam made or (now extremely rare) beer brewed at home. The second stage is far from being extinct. It is not unknown for tailors and dressmakers to use the customer's cloth; within living memory bakers were accustomed to work up the customer's flour, while millers ground the customer's corn; it is still the regular practice—though here the producer furnishes the material—for working watchmakers, shoemakers, cobblers, carpenters, house-painters, glaziers, plumbers and blacksmiths to execute the customer's orders. There still persist also many survivals of the old handicrafts even where machine production has become predominant, such as hand-loom weaving, hand-made shoes, watch-making, processes in the cutlery and other light metal trades. Nor has factory production completely displaced home production. Tailors and dressmakers give out cloth to be made into fabrics; iron is supplied to skilled outworkers who produce

hand-wrought nails of good quality on their forges; the manufacture of twine and nets is a domestic occupation; and other examples could be multiplied. If our industrial system to-day wears in many of its parts something of the air of a museum piece, it at least affords proof that economic change as a rule is gradual in development.

In the hundred years of freedom from great wars, which England enjoyed after a long drawn-out conflict with France in the eighteenth century and before the briefer but more deadly conflict with Germany in the twentieth century, the energies of her people were absorbed in the pursuits of industry and commerce. An ever-increasing stream of riches poured from her mines, her furnaces and her factories in the shape of coal, engineering products and textile fabrics which she exchanged for raw materials and for foodstuffs—corn, meat, butter, tea, sugar and fruits brought in her ships from all the regions of the earth. In the growing prosperity of the country the working class shared with other sections of the community. Its progress was revealed in the shorter hours of labour; in the advance in wages real as well as nominal; in the more abundant and varied articles of consumption; in the marked decline of intemperance; in the influence exerted upon social habits by the spread of education; in the mounting deposits of savings banks;[1] in the provision—made by friendly societies (whose number even in the eighteenth century ran into thousands) with several million members—for the casualties of life; in building societies to enable working men to own their homes;[2] in the institution of holidays; in the facilities for cheap travel; in the amenities afforded by public authorities, such as libraries, parks, etc.

Broadly speaking the standard working day in the nineteenth century exceeded ten hours during the first two

[1] Deposits in post-office savings banks in the United Kingdom rose from £5 millions in 1864 to £140 millions in 1901 and to £509 millions in 1938.

[2] The number of houses in England and Wales in 1851 was $3\frac{1}{2}$ millions (the population was 18 m.); $6\frac{3}{4}$ m. in 1901 ($32\frac{1}{2}$ m.); $9\frac{1}{2}$ m. in 1931 (40 m.).

quarters; it fell to ten during the third quarter and nine during the last quarter, where it remained for several decades until it was reduced to eight after the first world war. This generalization takes no account of overtime, variations between seasons, and work done at home or in non-industrial occupations. The state did not regulate adult male labour for nearly a hundred years until in 1908 it established an eight-hours day for coal-miners. Indirectly, however, factory legislation on behalf of women and young persons served to limit the working day for men. The act of 1847 restricted the hours of women in the textile industries to sixty a week; this was lowered to fifty-six and a half in 1874. In other industries the operatives were able to profit by the tide of prosperity in the seventies to secure fifty-four hours (for example, the engineers and builders in 1872); but young shop assistants were required to work as many as seventy-four by the act of 1887. It must be added that hours of labour throughout the nineteenth century were longest under the system of industry which had prevailed for centuries, namely, the domestic system carried on in the homes of the workers.

The complexity of wage-payments, where uniformity is lacking in the methods and standards of remuneration, does not easily lend itself to a summary statement. In general it may be said that money wages rose sharply during the early years of the nineteenth century when the country was at war and the currency was inflated. Subsequently they fell until in the thirties and forties they became nearly stationary. The third quarter of the century registered a marked improvement in the condition of the working class, for wages increased over 40 per cent. Some of the advance was forfeited in the depression of the eighties, but the lost ground was more than regained before the end of the century. The upward movement was accelerated during the first world war, and finally raised wages 70 per cent. above the pre-war (1914) level. Attempts have been made to compile index numbers of money wages for different industries. They

suggest that the chief gain in wages during the second half of the nineteenth century was made in cotton—roughly 100 per cent. as compared with 70 per cent. in building; 60 per cent. in agriculture; 50 per cent. in worsted,[1] coal, engineering, iron and steel.[2]

Nominal wages as measured in terms of money tell only half of the story: it is necessary to ascertain real wages as measured in terms of purchasing power. In other words wage movements must be correlated with price movements. During the war with revolutionary France prices soared. A cost-of-living index has been constructed and its indications may be used tentatively to show the trend of prices. Taking 1790 as the base year (100), the general level of prices mounted to 170 in 1800 and attained its highest point (187) in 1813; then in spite of occasional setbacks it continued to recede until it touched 83 in 1850. The decline was due to the cessation of government spending, the return from a paper to a metallic currency, the cheapening of production by machinery, the reduction of tariffs, the repeal of the corn laws, and the changes in the system of transport. It is significant that during the first half of the nineteenth century exports increased over 600 per cent. in volume but only 60 per cent. in value. During the next quarter of a century came the turn of the tide, and prices resumed their upward trend. The advance is usually attributed to the gold discoveries in California (1847) and Australia (1851) which multiplied the annual world output of gold. In the early seventies prices fell more rapidly than they had risen: the slump in wholesale prices brought them to a point where they were lower at the end of the century than at the middle. The output of gold remained unchanged but England now ceased to be the only country whose currency was based on the gold

[1] In the woollen industry it was 60 per cent. These percentages of wages in the mass only furnish general indications. As prices were rising, the percentage of increase in real wages was much less.

[2] A government inquiry listed the average earnings of adult men in a full week in the early twentieth century as follows: pig iron 34s. 7d., engineering 32s. 4d., cotton 28s. 8d., woollen and worsted 26s. 8d

standard, and the use of gold for industrial as well as currency purposes was also expanding. Other factors must not be overlooked—the drop in wheat prices was due to the opening up of the middle west in the United States, cheap steel was made possible by new processes, the costs of ocean transport were reduced by improvements in navigation. Then as the century drew to a close the annual production of gold was greatly enlarged with the development of the South African mines. Prices again rose though money wages lagged behind, and this explains the social unrest in England just before the first world war. When these changes in the general level of prices are taken into account, they lead to the broad conclusion that real wages were rising throughout the nineteenth century (except in the opening decade); and according to one statistical estimate they were nearly doubled between the middle and end of the century. The expansion in the purchasing power of the great mass of the community is reflected in the volume of imported foodstuffs (bread, butter, cheese, tea, sugar, eggs, meat).[1] If the price of bread is taken as a measure of the consumer's command over the necessaries of life, it appears that the retail price of the four-pound loaf of household bread in London was roughly as follows—15d. in the first two decades, 10d. in the next two, 8½d. in the next three, 8d. in the seventies, 6½d. in the eighties, after which it proceeded to fall to 5½d. or less.[2]

The standard of life of the working class cannot be gauged alone by the wages, nominal or real, of the male head of the household: contributory if indeterminate elements are the

[1] The quantities of imports in lb. which were retained for home consumption per head of the population in 1850 (and in brackets in 1900) were as follows —*butter* 1·30 (9); *cheese* 1·38 (7⅛); *wheat and flour* 81·76 (244); *sugar* 24·79 (87); *tea* 1·86 (6); *eggs*, number 3·84 (49); *tobacco* 1 (2); *bacon and ham* in 1850—1·41; *meat* in 1900—54.

For the quantities in 1913 and 1938 see Chapter Fifteen.

[2] In the first decade of the twentieth century the retail prices of food (per lb.) were as follows—*tea* 1s. 4d. to 1s. 8d., *sugar* 2d., *butter* 1s. 2d., *meat* (British) 7½d. to 9d., *meat* (imported) 4d. to 6d., *milk* (quart), 3d. to 4d., *coal* (cwt.) 9½d. to 1s., *potatoes* (7 lb.) 2½d. to 3½d., *flour* (7 lb.) 8d. to 10d., *bread* (4 lb.) 4½d. to 5½d.

earnings of its other members. In former centuries a widespread industrial pursuit, cottage spinning, enabled women and children to supplement the family income. When the source dried up, new channels of employment were created. Of these one was the textile factories, for the cotton and woollen industries always absorbed many more women than men. In addition women were occupied in the silk and hosiery manufactures. There also came into existence factories in non-textiles, for instance, chocolate, biscuits, jam, tobacco. Further opportunities for women's work were furnished by the cycle, motor and electrical industries. Commerce provided careers as book-keepers, secretaries, clerks, typists, shop assistants. The importance of women's place in the economic life of the country is indicated by the fact that, according to the census returns 1881–1931, they accounted for about 30 per cent. of the total number engaged in industry.[1] The most numerous of all women's occupations was domestic service: in the middle of the nineteenth century it claimed almost a million women,[2] or nearly double the number of female operatives in the textiles. At this period the common wage for a general servant in London was about ten pounds a year, besides board and lodging; before the first world war it had risen to twenty pounds; in recent years it has increased in greater proportion than the remuneration of any other form of service. Although domestic service has continued to grow with the expansion of the population,[3] it is now expected to attract a diminishing number owing to changes in social habits and the multiplication of other outlets for women's work.

[1] In Great Britain.

[2] Great Britain. The total includes general domestic servants, housekeepers, cooks, housemaids and domestic nurses.

[3] According to the census returns (Great Britain) female indoor domestic servants numbered 1,271,000 in 1921 and 1,471,000 in 1931.

Chapter Thirteen

THE NATIONAL ECONOMY (1815–1914)

II. Agriculture, Commerce and Finance

Agriculture

A review of the fortunes of English agriculture must be prefaced by some reference to the factor which was the mainspring of its development—namely, the growth of population.

The most arresting feature of English society during the nineteenth century, and the underlying cause of the transformation in England's economic situation, was a momentous change in the rate of natural increase which upset the traditional balance between agriculture and industry and forced this country to rely on international trade for its daily bread. In former ages the population seemed almost stationary, though it was perhaps 50 per cent. larger at the end of the eighteenth century than at the beginning. When the original census was taken in 1801 England and Wales contained approximately nine millions; the first decade added one million, the next five decades two millions each, and the next four decades three millions each—the total in 1901 was $32\frac{1}{2}$ millions while in 1938 it was $41\frac{1}{4}$ millions. The reasons for so startling a phenomenon have been much canvassed. The common explanation that it was the effect of the 'Industrial Revolution'—a 'response to increase in skill'—fails to account for a similar trend in countries which were not exposed to similar influences. The determining element was not a rise in the birth rate (it actually diminished during the nineteenth century[1]), but a fall in the death rate due to an improvement in the health of the nation as a result of a better water supply and drainage system,

[1] In England and Wales the average annual birth rate was 34·1 per thousand of the population in 1851; 28·7 in 1901; 15·1 in 1938. The average annual death rate was 21·8 in 1851; 17·2 in 1901; 11·6 in 1938.

the abolition of famine, the substitution of fresh for salted meat in winter, and the decline in diseases such as smallpox and fever. (The statistics of infantile mortality, however, showed a deplorable wastage of human life. In the seventies of the last century one infant in six died; at the beginning of the twentieth century one in seven; on the eve of the second world war one in twenty.)

At the present day the prospect of a stationary or even a declining population is causing considerable apprehension. Yet at one time a growth of population was commonly associated with a growth of destitution—an opinion to which Malthus gave classic expression in his famous *Essay on Population*. It was natural therefore that the rapid advance made in the nineteenth century should be viewed with misgivings. In reality the extent to which a country is overpopulated depends not on the numerical size of the population but on the flexibility of the economic system, that is, on its capacity for expansion sufficient to absorb the surplus without undue strain. The aftermath of the Napoleonic wars which bequeathed a legacy of inflated industries, a depreciated currency and heavy taxation, combined with the transition from handicrafts to mechanical methods of production, heightened the difficulty of making the necessary readjustments in order to meet fresh demands for employment and food. Accordingly public attention was drawn to emigration as a panacea for the social ills of the age. A leading economist, John Stuart Mill—whose *Principles of Political Economy* together with Adam Smith's *The Wealth of Nations* formed the economic bible of successive generations of Englishmen—laid down that the 'exportation of labourers and capital from old to new countries, from a place where their productive power is less to a place where it is greater, increases by so much the aggregate produce of the labour and capital of the world. It adds to the joint wealth of the old and the new country what amounts in a short period to many times the mere cost of effecting the transport. There needs be no hesitation in affirming that colonization in the

present state of the world is the best affair of business in which the capital of an old and wealthy country can engage.' He added: 'There is hence the strongest obligation on the government of a country like our own with a crowded population and unoccupied continents under its command to build, as it were, a bridge from the mother country to those continents [by facilitating emigration] without cost to the emigrants themselves.' However before Mill wrote, a parliamentary committee (1826) had recommended colonization as a remedy for the redundancy of population and the government responded by providing money for the purpose. This followed the lifting of the embargo in the previous year (1825) on the emigration of artisans, who were now accorded the same legal 'liberty to go abroad as other classes of the community.'

The movement overseas assumed substantial proportions, though it is not possible to indicate the number of English emigrants during the first half of the nineteenth century because the returns do not specify the nationality before 1853. The total number (including Scots and Irish) who left the shores of the United Kingdom averaged 20,000 a year in the twenties, 50,000 in the thirties, and 120,000 in the forties (the decade of the Irish famine). In the fifties English emigrants averaged 64,000 annually (the Irish 125,000), in the sixties 65,000, in the seventies 100,000, in the eighties (the decade of the depression) 150,000, in the nineties 110,000.[1] On the eve of the first world war the excess of emigrants over immigrants was a quarter of a million.[2] The continuous stream of emigrants overseas not only from the British Isles but also from the Continent of Europe meant that in the nineteenth century the Old World exported men as well as goods and services. It was the sub-

[1] These are not net emigration figures since there was also immigration.

[2] The numbers of passengers leaving the United Kingdom for countries out of Europe in 1913 were—British 470,000 and aliens 232,000 (total 702,000). The numbers arriving from countries out of Europe were—British 228,000, aliens 145,000 (total 373,000). The total net emigration was one-third of a million.

sequent drying up of the outflow that created problems of the first magnitude.[1]

The growth of population was accompanied by a change in its composition—a change fraught with untold significance. If English society had remained preponderately rural, it would have been necessary to cultivate inferior soils in order to increase the production of home-grown food: the consequence would have been a deterioration in the standard of living. What actually happened was the reverse: an expanding population enjoyed a higher standard because it switched over from agriculture to industry and commerce. In other words English society in the last hundred years became preponderately urban. In the middle of the nineteenth century half the population was concentrated in or around towns, in the eighties two-thirds, at the end of the century three-fourths, after the first world war four-fifths. It was this trend that led a writer as early as the seventies to exclaim: 'This country is becoming every ten years less and less of a farm, and more and more of a meadow, a garden and a playground.' In the following paragraphs we shall trace the process by which the English countryside was turned from 'a farm' into 'a meadow and a garden.'

The history of English agriculture in the nineteenth century falls into two distinct periods each covering fifty years. The repeal of the corn laws was the watershed which separated one system of agrarian economy, whose structure rested on the basis of artificial protection, from another system stripped of its legal monopoly of the home market and exposed to the full blast of world competition. The general conditions which prevailed in the first period have been described in the chapter on the free trade movement. Here it may suffice to recapitulate that the combined influence of a growing population, depreciated currency and a succession of bad harvests, caused corn prices to soar to unprecedented heights. The subsequent relapse threatened

[1] See Chapter Fifteen.

landlords and farmers with ruin since they had entered into commitments of which the 'real' burden was now augmented by the rise in the value of money. To meet a precarious situation a corn law was enacted expressly designed to keep domestic prices above the international level, and the ensuing controversy was only finally stilled with the total repeal of the protective legislation. Yet while the free trade debates fill the canvas, there is another side to English agriculture in the first half of the century. It was required to support a community which was doubled in the period, for the amount of imported food was usually small. Although the general population was growing fast the rural element expanded at a much slower rate. The great increase in production must therefore be attributed to other causes—the cultivation of the commons, the application of capital in improving the soil and in drainage, a more advanced technique, superior implements, better rotation of crops. Unfortunately agriculture is liable to vicissitudes which are beyond the farmers' control, and a deficient harvest at home spelt famine prices and starvation for the toiling masses. Under the corn laws of 1815–46, as we have seen,[1] wide fluctuations in the price of wheat were a normal occurrence. Wheat was the bread of the English people, the staple article of diet, the largest item in the household budget—and so its price was a matter of national concern. England had reached a stage in her economic development when she needed regular and continuous supplies as well as a price level that did not resemble a fever chart. In the second half of the nineteenth century a changed commercial policy enabled her to draw upon the resources of the whole world to supplement the produce of her own fields; and English agriculture now passed into a new phase.

The effects produced by the repeal of the corn laws were widely different from those which the landed interest had gloomily anticipated; they were also different from what the free traders had optimistically predicted. On the one hand

[1] See Chapter Eleven.

agriculture was not ruined: on the other hand there was for a generation no appreciable decline in the average annual price of wheat,[1] which during the space of three decades was only a few shillings below the 'hungry forties.' However the general price level was rising, so that the real fall in wheat was masked. Furthermore the wide fluctuations normally ceased—a notable exception was the Crimean war—when our ports were thrown open to the grain of other lands. But the arresting feature is that, while English husbandry had been in a depressed condition before the repeal, subsequently it entered upon what is often regarded as its golden age—in spite of the fact that grain was cheaper. Its prosperous condition was shared by all classes of the rural community, for the value of land, rents, profits and wages moved upwards. The explanation seems to be that the farming interest, deprived of legal protection against foreign grain, began to pull itself together and endeavoured to meet external competition by reliance upon its own efforts. This counsel had been given to it by James Caird who published in 1849 a pamphlet bearing the significant title: *High Farming the best substitute for Protection.* Like Arthur Young whose tours eighty years earlier are a classic, he made a pilgrimage of farming. He was struck, as his eighteenth-century predecessor had been, by the fact that 'the successful practices of one farm or one county are unknown or unheeded in the next.' It is certainly astonishing to learn that, in the decade of the Great Exhibition which revealed to the world England's industrial progress, 'within a couple of miles of Brighton may be seen in use every day' wooden ploughs drawn by six oxen, an operation 'infinitely more cheaply executed by one man and two good horses.' Accordingly Caird sought to impress upon farmers the lesson

[1] The average annual price of British wheat per quarter was 56s. 8d. in 1840–45 and 52s. 10d. in 1846–77. In the year of the repeal (1846) the average price was 54s. 8d. and the following year it was 69s. 9d. The annual average was 43s. in 1848–52, and 65s. 3d. in 1853–57 (the rise of 50 per cent. was due to the Crimean war). The annual average for the next twenty years (1858–77) was 51s. 4d.

that their salvation depended not on 'the crutch of legislative protection' but on raising the standard of husbandry. He urged them to make the best of the situation arising from a 'policy which whether for good or evil is now the law of the land,' and to use the resources which still remained—'capital, skill and the mutual co-operation of landlord and tenant.' Caird believed that a condition had arisen where capital could be more profitably exploited in other ways than 'in further attempting to force our poorer class of soils' to grow corn—since it was cheaper to obtain the surplus from the richer lands placed within our reach by 'the beneficient principle of free trade.' Instead farmers were advised to concentrate upon meat and dairy produce. The 'vast development of industry' increased the income of the general body of wage-earners and rendered possible a more extensive consumption of animal food—meat, cheese and butter—with a consequent advance in prices leading to a rise in landowners' rents, tenants' profits and labourers' wages. The advice did not fall on deaf ears. The large farmer, who hitherto had been interested primarily in wheat production, now combined it with meat and dairy produce: herein lay the strength of English agriculture and the source of its prosperity for the next thirty years.

This does not tell the whole story, for the abolition of the corn laws also accelerated technical progress, which was henceforth to serve in lieu of protection. The farmers set themselves to make their industry profitable by a greater outlay of capital and the employment of scientific methods. An outstanding improvement was the drainage of land on which several million pounds were expended. Parliament in repealing the corn laws provided public loans on favourable terms to landowners for drainage and reclamation (that is, bringing the waste land under cultivation). Another improvement was due to chemistry, which analysed the composition of soils and discovered artificial manures capable of making good their deficiencies and replacing the substances abstracted by particular crops. Chemical manures enabled

fertility to be maintained with less expense and in a more convenient form. The combination of agricultural practice with agricultural science was one of the notable differences between agriculture before and after 1850. The third change was the adoption of labour-saving machinery which reduced the costs of production. A writer in the seventies observed with approval a 'striking feature of agricultural progress in the last twenty years'—namely, the introduction of reaping machines and steam ploughs. Although the threshing machines were known a century before in the northern parts of England where in Cobbett's day they were 'turned by steam engines,' they found their way into the south at a slow rate. The steam plough lagged behind the steam threshing machine for reasons doubtless connected with the size of the farm. In the early years of the present century labour-saving machinery was extensively used on English farms, while the exigencies of the second world war led to the wide acceptance of motor tractors.

In recounting the factors which help to explain the apparent anomaly that the repeal of the corn laws ushered in an era not of disaster but of prosperity, mention must be made of the reduced cost of transport due to the railways. The farmers were able to buy more cheaply their requirements such as machinery, manures and feeding stuffs for cattle; at the same time they could sell more cheaply their own produce, corn and meat, and gain access to the new markets opened up to them. It is noteworthy, however, that even agrarian experts attributed the progress of English farming 'beyond all efforts of agriculturists' primarily to free trade, whose influence in promoting industrial prosperity was bound to have favourable repercussions upon the rural community. In contrast with the view so stoutly upheld in the eighteenth century by Arthur Young, it was now maintained that the fortunes of agriculture and industry were intimately related.

The organization of English rural society in the nineteenth

century was described by Caird in a book entitled *The Landed Interest.* His account, written in 1878 for the benefit of foreign readers, is substantially true of the whole century. He sets out the subdivision into landowners who furnish the fixed capital in the way of buildings and derive their income from rents; the tenant-farmers who direct cultivation and provide farm-stock, implements and circulating capital; and the labourers who cultivate the land as employees of the tenants and are paid wages. Caird spoke of the landowner or squire in much the same terms as Pitt had done nearly a hundred years earlier.[1] 'He takes a lead in the business of his parish, and from his class [are selected] the magistrates who administer the criminal affairs of the county and superintend its roads, its public buildings and charitable institutions,' and from his class also are largely recruited 'the learned professions, the Church, the army and the public services.' The distribution of landed property in the United Kingdom had been investigated a few years earlier in *The New Domesday Book* (1874), which showed that about a quarter was owned by twelve hundred persons and about a half by seven thousand four hundred.

Next to the landowners came the farmers. Their importance in the rural economy is indicated by the fact that the great bulk of land was cultivated not by the owners but by their tenants. In Caird's day only one-eighth of the soil was farmed by its owners; subsequently between the two world wars occurred a remarkable change when the ratio rose to one-third. The circumstances which favoured the large farm in the eighteenth century persisted in the following century. Thus in the census report of 1851—embracing approximately 215,000 farms (five or more acres) with an aggregate of twenty-five million acres—about one-third of the farms had a hundred or more acres and covered four-fifths of the total acreage, while one-thirteenth of the farms had three hundred or more acres but they covered as much as one-third of the total acreage.

[1] See Chapter Eleven.

The late nineteenth century witnessed an attempt fostered by the state to increase the number of small farms—to re-create an English peasantry which, as in earlier centuries, might have a stake in the soil of their country. Agrarian reformers urged the necessity of instituting an agricultural ladder in order to keep labour on the land and check the rural exodus—and the chief rung of an agricultural ladder is a small holding to which the farm labourer who sought independence could aspire. The Small Holdings Act of 1892 laid down that county councils should establish small holdings, the state providing money for buying the land but the new owner paying immediately at least one-fifth of the price. It failed, partly because the county councils were disinclined to carry out their duties, partly because they did not have powers of compulsory purchase, and partly because small holders did not wish to sink all their available capital in buying a farm. The law of 1907 was intended to remedy these defects—firstly, by enabling the Board of Agriculture to take action in cases where the county council was negligent; secondly, by giving the county council the right of compulsory purchase; and thirdly, by affording adequate facilities for tenants as well as for owners. Yet the measure did not prove very successful since it made no provision for strangers in want of local ties with the county where their application was lodged, nor for those who lacked the necessary experience and capital. Altogether before the first world war it furnished land for about fifteen thousand applicants and the area comprised about two hundred thousand acres, so that the public authorities have now become large landowners.

The lowest place in the agricultural hierarchy was occupied by the labourers. Their only capital, said Caird, lies in 'the furniture of their dwellings, their well-acquired experience in all the details of husbandry, and the bodily strength to use it.' Half a century earlier William Cobbett had commented on the 'furniture' and 'dwellings' as he found them in some places: 'Look at the miserable sheds in which

the labourers reside! Look at these hovels made of mud and of straw; look at the bits of chairs or stools, the floor of pebble, broken brick or of the bare ground; look at the thing called a bed; and survey the rags on the backs of the wretched inhabitants.' As regards 'bodily strength' Caird declared that 'till a recent period' wages were often 'below the means of maintaining' it, with the result that two men at low wages were kept to do the work of one well-paid labourer. He attributed the scanty remuneration of the farm labourers to lack of education and immobility—if they left the parish they risked the loss of relief in illness or old age. Their position only changed when a more extended area (the union) was substituted for the parish as the poor law unit, when the development of industry and transport increased the demand for men, and when the facilities afforded by steamships for emigration drew off the surplus rural stock. Above all, farmers were forced by the upward trend of wages—general in all industries—to use machinery; in turn this led to still higher wages of which the cost was compensated by superior skill and greater economy of labour. The evidence of statistics confirms the view that the condition of the farm worker markedly improved after the repeal of the corn laws. At the middle of the nineteenth century wages in some southern counties were scarcely more (at seven shillings a week) than they had been eighty years earlier when Arthur Young made his famous tours; but in the industrial north they were twice as high.[1] The disparity supported Peel's contention in the free trade controversy that they depended not on the price of agricultural produce but on the degree of proximity to manufacturing centres which offered alternative employment. The progress achieved by the end of the century is shown in the fact that the lowest rate (14s. 6d. in Oxfordshire) was double the lowest rate of the fifties, while

[1]	*West Riding*	*Lancashire*	*Gloucestershire*	*Dorset*	*Oxford*	*Norfolk*	*Sussex*
1767–70	6s.	6s. 6d.	6s. 9d.	6s. 9d.	7s.	8s.	8s. 6d.
1851	14s.	13s. 6d.	7s.	7s. 6d.	9s.	8s. 6d.	10s.6d.

the highest rate was treble.[1] In addition to payments in cash the farm labourer received allowances in kind. He also benefited greatly by the fall in price of his staple foods when they were imported freely from abroad. Money wages continued to rise in the twentieth century, and between the two world wars a minimum wage was instituted.[2]

In the economic affairs of nations as of individuals there is no assurance of permanence. With the late seventies came the turn of the tide: an era of prosperity yielded place to an era of depression. The effects of the repeal of the corn laws hitherto beneficial now began to work themselves out in an adverse influence upon rural society. The new situation was the result of two factors—the employment of steamers in ocean navigation, coupled with the opening up of the middle west of America by means of railways, enabled the United States to flood the English market with wheat. This was not due to a higher degree of efficiency. Caird affirmed (1878) that the average produce of wheat per acre was greater in England than in other countries: but henceforth it was brought into competition with wheat raised on the more fertile—because virgin—soils in the New World, where the produce per acre (though it was smaller) involved less labour and so was cheaper. Moreover the natural protection afforded by distance, which the English farmer enjoyed so long as it cost 11s. a quarter to send wheat to England, lapsed when grain was carried across the Atlantic under steam: by the nineties the cost had sunk to two-fifths and a decade later to a fourth. In the year of the repeal (1846) we imported 10 million cwts. of wheat and flour (of which $3\frac{1}{2}$ millions came from the United States), and 32 millions in 1860 (9 millions from the United States); in the late seventies there was a sharp advance in the upward trend which reached 68 millions in

[1] The general rise in agricultural wages in the second half of the nineteenth century is estimated at 60 per cent.

[2] Wages rose from 28s. (1924) to 34s. 7d. (1938); after the second world war there was a substantial advance. For the minimum wage, see Chapter Ten.

1880 (45 millions from the United States), and 96 millions in 1892 (61 millions from the United States).[1] The consequence was a drastic fall in price which in the eighties tumbled down by 20s. (the equivalent of 40 per cent.[2]), until it finally touched bedrock in 1894 at 22s. 10d. The result was seen in bankruptcies among farmers of whom many lost their capital, in remissions of rent even up to 50 per cent. (the average between 1878 and 1894 was nearly 25 per cent.), and in the reduction of wages of agricultural labourers. Confronted with this situation the English farmers began to lay down arable land to grass. The arable area diminished from fifteen million acres in 1871 to nine millions on the eve of the second world war; the permanent grass increased from eleven millions to sixteen millions. There was a decline in root crops, green crops, barley, and above all in wheat—in the seventies three and a half million acres were under wheat but two generations later the wheat acreage had shrunk to one-third.[3]

The conversion of arable into pasture had a profound significance, for it made the English people dependent on external sources for their food. Down to the last decade of the eighteenth century England was not completely divested of the status which she had enjoyed under the Roman Empire when she was styled 'the granary of the north,' since she still continued to 'feed other countries.'[4] For another six decades down to the repeal of the corn laws she continued to feed her own people, and the quantity of imported wheat was small. Then the pendulum began to swing in the opposite direction. In the latter half of the nineteenth century wheat imports multiplied tenfold. In the fifties one loaf out of four

[1] In 1913 we imported 123 million cwts.; the share of the United States (43 m.) declined to one-third; while nearly half (58 m.) came from Canada, India and Australia. In 1938 we imported 108 m.

[2] Between 1870 and 1877 the annual average price of British wheat per quarter was 52s. 10d. It fell in 1878–83 to 44s. 5d.; in 1884–92 to 32s. 6d.; in 1893 to 26s. 4d.

[3] It was $1\frac{1}{5}$ millions in 1931, but subsequently recovered to $1\frac{4}{5}$ m. in 1938. (The total area of England and Wales is approximately 37 m. acres.)

[4] See Chapter One.

came from abroad, in the seventies two out of four, in the eighties three out of five, in the present century four out of five.[1] Meat and dairy produce show a comparable position. Imports were negligible until free trade unlocked our ports and artificial refrigeration was adopted. Beef was brought from the United States in the seventies[2] and mutton from Australia in the eighties; eventually no less than three-fifths of our meat supply came from abroad. The immense growth in the consumption of imported food per head of the population is noticed below.[3]

Unable to meet the competition of corn or the inferior qualities of meat raised overseas, the English farmer concentrated his energies on those commodities in which external competition was powerless to injure him. Pasture-farming (no longer, as hitherto, combined with corn-growing) together with market-gardening now entered into their own. The very cheapness of grain, which was so detrimental to the corn producer, gave the producer of other foodstuffs his golden opportunity, because the fall in the price of bread left the industrial population with a larger margin for a more varied diet. The result was an expanding demand for meat, milk, butter, eggs, fruit and vegetables. In the case of meat the rising prosperity of the kingdom created a market for the best quality; great progress was made in the technique of stock-farming, and English pedigree cattle became famed throughout the world. Caird had claimed that in quality and quantity of livestock our country enjoyed superiority. Half a century later an official court of inquiry reached the conclusion that 'at no time has the livestock of Great Britain been of such high standard. In this respect it still holds a premier position.' Another branch of pasture-farming was dairying, and in the supply of fresh milk and cream the native producer possessed a monopoly. Simultaneously

[1] Home production of wheat in the United Kingdom amounted to 44 million cwts. in 1884, 29 m. in 1901, and 20 m. in 1931. It recovered to 39 m. in 1938 under the influence of a subsidy (see Chapter Fifteen).

[2] Argentina became the largest source of imported beef.

[3] Section on Commerce in the present Chapter.

the increased consumption of fruit and vegetables, eggs and poultry, resulted in more attention being paid to market gardening. Under the stimulus of these altered conditions, agriculture began to revive, and after the turn of the century it was described by a competent authority as 'sound and prosperous.' The recovery of farming from the depression of the nineties was reflected in a rise in the price of agricultural produce—even wheat rose almost 50 per cent. above its former bedrock price.[1] The momentous reversal which took place in public policy towards agriculture in recent decades will be shown in a later chapter.

The change in the system of production was accompanied by a numerical decline of English rural society, for tillage employs more labour than pasture-farming. During the first half of the nineteenth century the number of persons engaged in husbandry had continued to expand—though at a slower rate than the general population—owing to the enhanced demand for cereals on the part of a rapidly growing nation. When the corn laws were repealed, there were approximately a quarter of a million farmers and one million labourers in the fields. A century later the number of farmers remained the same but the number of employees had been halved. The decline in the wage-earning population was due mainly to the replacement of manual labour by machinery and to the contraction of the arable acreage. Subsidiary reasons for the rural exodus were the economic opportunities and social amenities of the towns, the lack of cottages, the reduction in juvenile employment. Yet the migration from the country was in general compulsory rather than voluntary: it was caused by the falling-off in the demand for agricultural labour. The course of events thus demonstrated the truth of Caird's observation (1878) that English 'agriculture is no longer influenced by considerations of the means of finding employment,' but seeks 'the largest produce at the least cost

[1] In 1894 it was 22s. 10d. Then it moved upwards and in 1913 it reached 31s. 8d. In 1934, during the great depression, it fell to 20s. 9d.—a figure unknown for centuries; but by 1938 it had risen about 40 per cent.

—the same principle by which the power-loom has supplanted the hand-loom.'

Commerce

The reconstruction of English agriculture in the nineteenth century was dictated by the new orientation of policy, which completely discarded the conception of a self-sufficing economy. England ceased to expect her farmers to feed her. 'Our foreign trade,' it was now proclaimed, 'enables us to add the food resources of other countries to our own.' Commerce thus assumed added importance when it was required to furnish the very necessaries of existence. It is not surprising then that the growth of industry was accompanied by a notable expansion in the volume of exports and imports. Exports were essential to provide employment for a population which increased from nine to thirty-three millions in the course of a hundred years, as well as to pay for imports in the shape of food and raw materials. At the same time our dependence on markets abroad meant that our national economy was exposed to vicissitudes in the world economy which were largely beyond our control. This element of instability was not a novel phenomenon but the area of its repercussions was widened and the gravity of its consequences proportionately deepened.

The exports of native produce, according to the values declared by merchants, advanced only slowly in the first half of the nineteenth century; the volume had grown immensely but values were depressed by the fall in prices due to improvements in methods of production. In the second half exports soared from £95 millions in 1855[1] to £291 millions in 1900 and to £525 millions in 1913. The impressive rise of 80 per cent. in the opening years of the twentieth century, in the face of acute foreign competition, was a signal refuta-

[1] The year 1855 is taken because the method was now adopted of valuing *imports* on the basis of their computed real values (instead of the widely different basis of official values). The values of *exports* had long been those actually declared by merchants—a practice extended subsequently (1870) to imports.

tion of the frequent jeremiads of ruin and decline. The importance of the external trade is shown by the fact that we shipped abroad almost one-third of our industrial output in 1907. Cotton manufactures held pride of place. They were followed in order of importance in 1855 by woollen manufactures, iron and steel, hardware and cutlery, haberdashery, coal, etc.; and subsequently in 1913 they were followed by iron and steel, coal, woollen manufactures, machinery, chemical products, etc. Textile yarns and fabrics (cotton, woollen, linen, silk, etc.) accounted for 56 per cent. of the total exports in 1855 and 35 per cent. in 1913. The United States continued for a long time to be our largest customer: she took about one-fifth of our exports in 1855, but only about one-twentieth in 1913. Then came in 1855 India, Germany, France, Australia, etc.: in 1913 the order was India, Germany, Australia, the United States, France, etc. The proportion of exports taken by the Empire from the mother country in the latter half of the nineteenth century remained stationary at one-third. After the first world war the Empire's portion rose to 45 per cent.[1] and the Ottawa Agreements lifted it to 50 per cent.

The imports reflect the epoch-making change which had taken place in the national economy. Before the nineteenth century England raised at home bread to feed her people and materials to feed her staple manufacture. Now she is dependent on other countries for four-fifths of the wheat and three-fifths of the meat, for the whole of the cotton and nine-tenths of the wool, for more than a third of the iron ore, for all the petroleum and rubber, for most of the timber—and the list can be extended. In coal alone are the native resources sufficient for her needs. In order of importance our principal imports in 1855 were cotton, grain and flour, sugar, oils, timber, wool, etc., and subsequently in 1913 grain and flour were followed by cotton, meat, oils, wool, timber, sugar, etc. In the space of two generations imports

[1] Average of the years 1927–29. For the Ottawa Agreements, see Chapter Fifteen.

increased five-fold in value (£143 millions in 1855, £523 millions in 1900, and £769 millions in 1913). One-fifth of the imports came from the Empire in 1855–1900; the proportion rose to one-fourth in 1913 and to two-fifths between the world wars. The United States sent us about one-fifth of the imports: she was followed in 1855 by Germany, India, France, Netherlands, etc., and in 1913 by Germany, India, France, Argentina, Russia, etc. The growth in the consumption of imported foodstuffs is especially noteworthy because it was directly owing to a rise in the standard of living of the masses. In the second half of the nineteenth century[1] per head of the population eggs were multiplied thirteen-fold, butter seven-fold, cheese five-fold, tea and sugar over three-fold, wheat three-fold, tobacco[2] two-fold; imported beef and mutton, formerly negligible in amount, became a staple article of diet.

On the eve of the first world war England's external commerce, encircling the globe with a 'golden girdle,' attained its highest pinnacle. Her share of international trade accounted for no less than one-sixth of the world's imports and one-seventh of the world's exports. The commanding position which she enjoyed was due to a variety of factors. One was the policy of free trade. In the long run imports are paid for by exports; and when our doors were thrown wide open to the goods of other nations the latter were enabled to purchase our goods in return. The second was the high quality of many native wares. The reputation acquired in earlier ages was abundantly maintained when handicrafts were superseded by mechanical production. The third was the investment of capital overseas, which served the dual purpose of promoting exports and opening up new territories to provide us with food and raw materials. Long before the nineteenth century it was an established practice to export capital abroad. The colonies became a field for

[1] For the quantities imported per head of the population in 1913 and 1938, see Chapter Fifteen.

[2] On the eve of the first world war a writer commented that 'English women hardly smoke at all.'

enterprise from their foundation, and moneyed men sank considerable sums in them. It was asserted early in the eighteenth century that we 'supplied foreign princes, lent money upon bottomry [on the security of the ship] and upon commodities in all countries, the remittances from whence swelled the balance of trade so much in our favour.' Later in the century native capital was invested in French water and canal concerns and even in the Crimea; while Boulton and Watt frequently received payment for engines sold to foreign buyers in the form of shares in foreign companies. In the nineteenth century opportunities for international lending multiplied, and we acquired an interest in railways and other large undertakings throughout the world. It was estimated in the eighties that our investments of capital abroad amounted to £1,500 millions.[1] Moreover London as the world's money market financed short-term transactions on a scale which knew no national frontiers. England then had a standing similar to that now held by the United States, and John Bull was depicted as 'throned on his money bags.' In addition exporters and importers were furnished with the financial facilities needed to conduct their business all over the earth; while they also had at their command a mercantile marine which, owing to the existence of a universal network of coaling stations, could penetrate into every part of the globe.

The fourth factor which influenced the development of English commerce was that the 'Industrial Revolution' started in this country, and manufacturers profited by the priority which they enjoyed. The rotary steam engine, most of the machinery in textiles, many of the machine tools in engineering and new processes in steel-making were British inventions; and for a time they gave the industries concerned a semi-monopolistic position. There is, however, a tendency to exaggerate the importance of a temporary advantage. After all our oversea trade reached its climax at a period

[1] Giffen's estimate. The estimates for earlier decades are unreliable. Those for the present century are given in Chapter Fifteen.

when the United States and Germany were in the front rank of the industrial nations; no doubt there was a change in our situation relative to our competitors but the aggregate volume of our exports enormously increased. Furthermore, in spite of efforts to prevent the emigration of skilled artisans or the transport of machines,[1] the secrets of the 'Industrial Revolution' soon leaked out abroad. The secretary to the Board of Trade told a parliamentary committee of inquiry in 1840: 'We find in France that the principal foremen in the cotton factories are from Lancashire; you find it in Belgium, in Holland, and in the neighbourhood of Liège.' In Vienna 'the directors and foremen' in the cotton mills were 'chiefly Englishmen or Scotsmen from the manufactories of Glasgow and Manchester.' He added: 'You find British capital going into Belgium, France and Germany to a very great amount; and this very British capital employed there producing manufactures' which competed with our own exports. Nevertheless if other nations borrowed from England in the first half of the nineteenth century, she in turn borrowed from them in the second half; for instance, the United States led the way with high-speed tools in engineering, with sewing machines used in clothing factories, and with machines for boot-making.

The organization of oversea commerce had already crystallized into its modern essentials at the dawn of the nineteenth century. London retained the ascendancy which it had invariably claimed over its provincial competitors, the outports, although the condition of the latter had immeasurably improved since the seventeenth century. Bristol was no longer second on the list because she had yielded her place to Liverpool, while Hull came third. 'Free trade,' in one of the older usages of the term, was now established in the acknowledged right of all persons to trade freely

[1] The legal restrictions on the emigration of artisans, imposed in the seventeenth century, were removed in 1825. The embargo on the export of machinery, which also dated from the seventeenth century, was modified in 1825 when the Board of Trade was given a discretionary power of relaxing the law against the export of specified kinds of machinery, and it was finally abolished in 1843.

abroad without being a member of a privileged company. Several companies still preserved a monopoly within their sphere of influence, which they were doomed to lose within a few years.[1] As in former centuries commercial intercourse with other countries was conducted mainly by merchants, but some manufacturers sold direct to customers instead of employing the services of intermediaries. Merchants have always been accustomed to specialize in markets—as well as in commodities—and the practice continued notably in the case of cotton goods which were taken by different vendors according to the market for which they were intended. Merchants also fulfilled an important role in the structure of credit. The system of making advances to those who handled a commodity at each stage of production and distribution was applied to external in addition to internal commerce. Bankers and brokers financed merchants, who in turn gave credit to the other links in a chain which led ultimately to the producer overseas.

Similarly the channels of domestic trade have not undergone any radical alterations in the past hundred and fifty years, though the scale of operations is much enlarged. Fairs long ago ceased to enjoy the importance which they once possessed, yet weekly markets still furnish an opportunity for the sale of country produce. The Municipal Corporations Act of 1835 affirmed the legal right of all persons to set up shop without being a member of a gild—it made *de jure* what was already substantially *de facto*. The number of middlemen kept pace—perhaps more than kept pace—with the increasing complexity of the economic system due to the growth of population, to urban concentration, to expanding prosperity, and to the catering for special tastes and needs. The consumer became dependent for almost all his requirements upon the retailer, who sometimes bought direct from the makers, but more generally was supplied by wholesalers with the variety of produce covering his shelves. Co-operative societies with branches in the suburbs and

[1] See Chapter Four.

joint-stock multiple shops grew prominent in the second half of the nineteenth century, yet neither they nor the large departmental store have squeezed out the 'one-man business.'

Finance

Down to the nineteenth century the English currency system was one of bimetallism—that is, both gold and silver were legal tender; but in 1816 silver coins were made legal tender to the value of forty shillings only, and beyond this amount payments could be demanded in gold. Three years later another act of parliament provided that Bank of England notes, which were declared inconvertible in 1797 during the war with France, should gradually become convertible into gold. The transition period ended in 1821 when the Bank completely resumed payment in specie. The return to a metal currency met with considerable opposition. Attwood, a prominent advocate of a paper currency, urged that an abundancy of money would stimulate economic activities. 'Let the circulation be kept on so ample a footing as shall create a greater demand for labour than labour can possibly supply.' It is evident that there is no novelty in the current theories of 'full employment,' nor is there any substantial difference even in the proposed methods of achieving it. Attwood and his 'currency men' failed to carry conviction for proposals 'which few understand and all who did condemned' (so alleged a contemporary).

England was now on the gold standard, a term which means that the national currency is convertible into foreign currencies at fixed rates of exchange in gold. Her policy of free trade in gold—the absence of restrictions on its export—enabled her to attract gold whenever she needed it by the device of raising the bank rate. When the Franco-Prussian war broke out in 1870 she still remained the only state to adhere to the gold standard, but in the next few years her example was followed by the United States and the chief European countries. The first world war forced

England to create an inconvertible paper currency; then in 1925 the gold standard was again restored on the basis of the pre-war parity.[1] 'No one would dream of disturbing the settlement so arrived at,' it was authoritatively affirmed; within three years of this confident prediction the settlement had been shattered.[2]

The early history of banking has been sketched in a previous chapter. At the opening of the nineteenth century the sole joint-stock bank was the Bank of England, which enjoyed the right to issue notes. The right was shared, not by other London banks which had discontinued the practice, but by country banks now numbering nearly four hundred. A new era in banking was ushered in by the act of 1826 which permitted a joint-stock bank, without limitation as to the number of persons comprising it, to be set up outside a sixty-five mile radius from London; and these country joint-stock banks opened branches. Next came the act of 1833 which acknowledged the claim of corporate bodies in London itself to conduct banking functions except the issue of paper money: the first to take advantage of the opportunity was the London and Westminster Bank founded in 1834. The Bank Act of 1844 completed the series of legislative measures which formed the basis of the modern structure of English banking. This famous enactment embodied the principle that the amount of 'bank money' (bank notes) which may be issued should be regulated by the amount of gold held in the Bank of England. It laid down that the latter might issue notes up to fourteen million pounds against securities, and that any excess must be against coin and bullion. No other banks could issue notes other than country banks already exercising the privilege, and they were limited to the total of their current issue. Their rights lapsed if they became insolvent or were absorbed by another bank: in such cases the Bank of England could increase its own issue to a corres-

[1] The gold sovereign, however, was not restored to circulation.
[2] In 1931. See Chapter Fifteen.

ponding extent. The aim was to curtail the use of bank credit in times of speculation and trading booms. On three occasions in the nineteenth century the Bank Act was suspended owing to a financial crisis. The first was in 1847, the year of the 'railway mania,' when there was over-speculation in the shares of railway companies; it was also the year of a dramatic collapse of corn prices which were nearly halved, causing the failure of corn firms, banks, bill-brokers and others. The reserves of the Bank of England were depleted, so the chancellor of the Exchequer (1847) authorized it to enlarge the amount of its discounts and advances by issuing, if necessary, notes in excess of the statutory limitation. The sanction helped to relieve anxiety and restore public confidence. The second crisis occurred a decade later (1857). Originating in the United States, it invaded other national frontiers. The chancellor again empowered the Bank of England to violate the Bank Act in order to assist banks and bill-brokers. This was the sole occasion on which the Bank reluctantly decided to avail itself of the permission to expand the note issue beyond the legal maximum. The third crisis came in 1866. Impending war on the Continent produced a panic in which crashed, among other financial houses, Overend and Gurney who failed for several million pounds. Although the chancellor approved a breach of the Bank Act, no issue of uncovered notes was required. Upon the outbreak of the first world war in 1914 the Bank Act was a fourth time suspended.

One important change in the banking world was not indebted to legislative action. Nothing has contributed more to the security of the English banking system than the consolidation of a great number of small institutions—liable to be caught up in the whirlpools of a financial storm—into a few units of towering strength. The number of country banks grew in the first two decades of the nineteenth century from 386 to 781, but by 1841 it had fallen to 321 and it continued to fall. The rate of mortality was alarmingly high: between 1815 and 1830 over 200 banks became insolvent owing to

speculation with inadequate resources or to overlavish lending to customers. However in the eighties the private banks mustered 250, though henceforth they were more rapidly absorbed by the joint-stock banks and only about a dozen survived when the first world war started. The joint-stock banks underwent a similar shrinkage. None was in existence (except the Bank of England) before 1826, but there were 32 at the end of 1833 and 115 in 1841; they increased slightly in later years until in the present century the leading joint-stocks banks amalgamated into five great corporations, and few independent banks are now left. The English banking system thus presents a marked contrast with that which prevails in the United States, who has not hitherto favoured the building up of great financial houses equipped with immense resources and a nation-wide network of branches. One other development must be noticed. The cheque system is as old as the seventeenth century: an enormous application in modern times made it possible to economize in the use of a gold currency and subsequently of a paper currency.

Down to the nineteenth century taxation[1] was mainly indirect: it was levied in the form of customs duties on commodities entering the country or in the form of excise duties on commodities produced within the country. Edmund Burke claimed that 'our taxes for the far greater portion fly over the heads of the lowest classes.' Yet in the middle of the eighteenth century it had been estimated that a labourer paid over 6 per cent. of his scanty earnings in taxes on beer, salt, sugar, leather, soap, candles, tobacco, etc. Although some held the view that such taxes stimulated him to greater

[1] In earlier ages Crown revenue was derived from a variety of sources—the royal estates, feudal dues, taxes on movables (fifteenths, tenths, subsidies), customs duties, profits of justice. Two important taxes were instituted in the seventeenth century. One was the excise (intended to compensate for the abolition of feudal dues). The other was an income tax on real and personal estate, which survived almost entirely as a land tax. Other taxes, analogous to a property tax, included hearth-money, window tax, taxes on servants, carriages, animals, etc.

exertions, others contended (even as early as 1641) that 'the poor man's food should be free of all charges.' The 'second hundred years war' in which England was engaged with France necessitated huge increases in national expenditure and a corresponding advance in taxation. Much of the distress which prevailed during the 'Industrial Revolution' was attributed to the pressure of taxes. Thomas Paine in his *Rights of Man* spoke of the spectacle of youth going to the gallows and age to the workhouse, and he attributed the wretched condition of the people to wars and the taxes which they involved. It is noteworthy that a president of the United States in his inaugural address (1801) depicted the ideal state as one which did not 'take from labour the bread that it has earned.' During the first half of the nineteenth century the fiscal burden continued to fall heavily on the labouring population; and it was rendered still more oppressive when the corn law became a tax on bread.

The accepted theory of public finance was the theory of diffusion. It was believed that the weight of taxation was lightened by spreading it over as wide an area as possible. Accordingly taxes were raised on every conceivable commodity. The multitude of impositions with which all classes in the community were visited was immortalized by Sydney Smith. After enumerating the various duties which a man had to pay at each turn his description ends as follows: 'The dying Englishman pouring his medicine which has paid 7 per cent. into a spoon that has paid 15 per cent. flings himself back upon his chintz bed which has paid 22 per cent. makes his will on an eight-pound stamp and expires in the arms of an apothecary who has paid a licence of a hundred pounds for the privilege of putting him to death. His whole property is then immediately taxed from 2 to 10 per cent. Besides the probate large fees are demanded for burying him in the chancel. His virtues are handed down to posterity on taxed marble, and he is then gathered to his fathers to be taxed no more.' The reform of the fiscal system, described elsewhere, led to the reduction and eventually to the aboli-

tion of many hundreds of customs duties during the forties. It was accompanied by the sweeping away of excise duties on commodities produced at home, until there only remained a handful which included liquor and patent medicines. Taxes on journals, on paper and on windows disappeared together with licences for the sale of tea, coffee, cocoa, etc. It was estimated by a writer in the eighties that as a result a wage-earner with a family now paid about 7 per cent. of his income in taxes in this decade as compared with 16 per cent. in the forties.

To fill the gap created in the national budget by the drastic curtailment of indirect taxes, another mode of taxation was revived. The income tax had been instituted by Pitt near the end of the eighteenth century: with reluctance since it involved (in the words of Adam Smith) 'an inquisition more intolerable than any tax.' Pitt had sought to avoid the income tax—so he explained to Parliament in 1797—because it required 'such an investigation of property as the customs, the manners and the pursuits of the people would render odious and vexatious.' He conceded that 'if the amount of every man's property could be ascertained, it would be a most desirable thing to make the people contribute to the public exigence in proportion to their wealth. But there existed no means of ascertaining the property of individuals except such as were of a nature that could not be resorted to.' Instead therefore he adopted 'a tax upon general expenditure.' Nevertheless he found himself constrained by the insufficiency of the yield of the taxes on consumption to impose in 1799 an income tax which necessitated 'a scrutiny of property in every point of view highly objectionable.' Incomes under £60 a year were exempt; at £60 and over the rates varied; at £200 and over the rate was two shillings in the pound. The tax was described as 'a great temporary exertion' to finance the war with France. Pitt asserted that in all previous wars 'the mode of raising money has been that of borrowing and leaving to posterity the burden of paying principal and interest.' Accordingly the income tax

in its origin was designed to avoid lasting burdens by bearing the pressure for a short time. After the conclusion of the war Parliament forced an unwilling government to drop it (1816).

First used as an instrument of war finance, the income tax was restored in the forties in order to carry into execution the free trade programme of liberating commerce from the stranglehold of tariffs. In altered circumstances the mantle of Pitt now fell on Peel. In his turn he explained to Parliament the need for 'subjecting the opulent classes to the imposition of an income tax out of consideration for the permanent prosperity of our manufactures.' Yet even free traders, while they accepted the position as the lesser of two evils, shared the general aversion for 'those men with sharp noses and ink bottles at their buttons, who have gone prying about your houses and at your back doors to learn how many dinner parties you give in a year and to examine and cross-examine your cooks and footboys as to what your style of living may be.' Peel restricted the income tax—revived in 1842 at the rate of sevenpence in the pound—to a duration of three years, which would afford an opportunity of remedying 'a great public evil,' the deficit in the revenue caused by his commercial reforms.

Successive chancellors of the Exchequer protested their firm determination to abolish the income tax but meanwhile kept it in existence by renewals for limited periods. For half a century it continued to make its last but one public appearance in the national budgets. At length in 1874 it hovered on the very edge of the abyss in what now seemed a genuine farewell performance, for in that year the rate almost touched vanishing-point (twopence in the pound). However the taxpayer was once more disillusioned when it rose again. At the beginning of the first world war it stood at fifteen pence and at the end at six shillings in the pound; in the second world war, which brought within the net many millions of wage-earners, it soared to ten shillings[1] while on higher incomes

[1] These rates are subject to various allowances; and a minimum amount and a fraction of earned incomes are exempt.

there was in addition a progressive sur-tax. Thus after a long and chequered career the income tax had become a principal pillar of public finance.

Fed by two mighty streams of taxation, one direct and the other indirect, the state revenue expanded enormously with the ever-increasing prosperity of the country. Not only did the budget grow in size but it changed in character: from being primarily concerned with the defence of the realm and the payment of interest on war debts, it developed into an engine for redressing inequalities of wealth and carrying out a far-reaching social programme. The arid statistics of national expenditure are invested with a fresh significance, when they are used to interpret the trends in public policy. Prior to the long war with revolutionary France (1793) taxation produced about £19 millions. After the conclusion of peace until past the middle of the nineteenth century the amount settled down on a basis three times as large. The interest on the national debt absorbed about £28 millions or one-half, the defence services (army and navy) £15 millions, the collection of the revenue £4 millions; and so there remained only £10 millions for all other disbursements. In the latter part of the nineteenth century expenditure began to move upwards, and by the end it had exceeded the £100 millions mark. The Victorian age which regarded thrift as a moral duty was passing away and with it the pursuit of rigid economy in the conduct of the public finances. The first decade of the new century inaugurated an era of rapid growth in state spending—the amount rose to £150 millions in 1910 and almost reached £200 millions on the eve of the first world war. One cause of the increase was the enlarged civil service, of which the charge (£54 millions[1]) was over twice as high in 1913 as it was at the opening of the century—a notable indication of the extent to which the state was now exercising control over the lives of its citizens. Another cause was the burden of the defence

[1] Civil service expenditure includes civil departments, education, justice, public works, etc.

services which in the same period nearly doubled. A portentous element in the situation was the swiftly mounting outlay on social services especially education and old age pensions. After the first world war the budget totalled £800 millions or four times its pre-war size. The interest on the swollen national debt, pensions and expanding social services all absorbed immense sums; moreover the general level of prices had risen by about two-thirds, and this also contributed to swell the cost of the civil and defence services.[1]

The public attitude towards state expenditure has undergone a striking change. In the middle ages articulate opinion was insistent that the king 'should live of his own' and avoid taxing his subjects: in the seventeenth century the legislature showed the utmost reluctance to unloosen its purse-strings: in the eighteenth and nineteenth centuries a frugal administration was the nation's ideal. When the force of circumstances compelled governments to start an epoch-making departure from the traditional concepts, the 'disastrous expansion of the national expenditure' was viewed with dismay. Chancellors of the Exchequer found themselves confronted, as one of them deplored, with 'a universal demand for more and more expenditure every year for every conceivable object, all of them excellent objects but all of them pursued absolutely without regard to their cost.'

The change of sentiment was not wholly due to the 'excellent' or at any rate the apparently necessary 'objects' which presented themselves before a harassed Treasury. Two other factors were at work. One was psychological. During the first world war the nation became accustomed to an unprecedented pouring out of public money—separation allowances for the wives and children of service men; pensions for the disabled, widows and orphans; subsidies to keep down prices; high wages of munition workers; money gratuities

[1] In 1938 on the eve of the second world war the budget amounted to £1,006 millions. The defence services absorbed £254 m.; the civil services £431 m. (this included education £65 m. and pensions £43 m.); and the national debt £232 m.

to the demobilized. The golden manna had dropped on millions of families, and after the lavish outlay of the war years a return to cheese-paring economy was no longer tolerated. The other factor was the growing influence of a school of thought which taught the doctrine that it was incumbent upon the state to redress the inequalities between wealth and poverty, and to use the fiscal weapon as the means of effecting a social revolution—improving the distribution of the national income by taking from one class to give (in the form of social services) to another. The twentieth century repudiated the belief entertained by earlier generations that it was 'perhaps beyond the power of human legislation to correct' inequalities of property.[1] Pitt, in expounding this view to a House of Commons which was not likely to dissent from his argument, explained that the inequalities 'arise from our social state itself; and the correction of that order we cannot, as we ought not, attempt to alter. It would be a presumptuous attempt to derange the order of society which would terminate in producing confusion, havoc and destruction, and with a derangement of property terminate in the overthrow of civilized life.'[2] But in 1798, when all this was said, the mass of the nation had nothing to do with 'human legislation' except to obey it; in recent decades it has embarked upon the experiment of creating a new civilization through the medium of taxation, and the outcome still lies hidden in the womb of Time.

Although the yield of taxes grew prodigious, its real burden cannot be measured by its volume in terms of money. It depends upon the proportion which government expenditure bears to the national income: but here we enter into the

[1] In 1937, prior to the second world war, 44,452 persons had an annual income exceeding £2,000 but not exceeding £3,000; 20,269 persons = £3–4 thousands; 11,187 = £4–5 th.; 6,729 = £5–6 th.; 4,344 = £6–7 th.; 3,015 = £7–8 th.; 3,876 = £8–10 th.; 4,298 = £10–15 th.; 1,619 = £15–20 th.; 796 = £20–25 th.; 413 = £25–30 th.; 444 = £30–40 th.; 164 = £40–50 th.; 232 = £50–75 th.; 85 = £75–100 th. Lastly 99 persons exceeded £100,000 a year. In all 102,022 persons exceeded £2,000 a year.

[2] Hume believed that a state was weakened by 'a too great disproportion [of wealth] among its citizens.'

realm of conjectures. In the decade following the Napoleonic wars the national income was estimated at £300 millions;[1] in the forties at £500 millions; in the eighties at nearly £1,300 millions; at the turn of the century at £2,000 millions; and between the two world wars at £4,600 millions.[2] On the basis of these computations it would appear that the income of the community had grown something like fifteen-fold within the space of a hundred years, while oddly enough the budget also was fifteen times as large.[3] We are thus led to the arresting conclusion that the proportion absorbed by the state (about one-sixth) was approximately the same in the twenties of the nineteenth century as in the corresponding decade of the following century. But between the beginning and end of the period government expenditure lagged behind the national income, which in the second half of the nineteenth century was expanding fast; at the close of the century the proportion had sunk to one-twentieth. The Gladstonian principle of finance aimed at keeping down the burden of taxation and leaving money to fructify in the hands of its owners, in contrast with the current principle which favours the substitution of communal for individual spending. Then the trend of public policy was sharply reversed; and after the first world war the proportion again recovered to one-sixth.

Another valuable conclusion emerges from a study of the national debt. It was nearly nine times as large after the war of 1914–18 as it was after the war with France a century

[1] Parnell, *On Financial Reform* (1830), cites the following estimates: at the Revolution of 1688—£43 millions; Arthur Young (1776)—£100 millions; 'of late years'—£300 millions.

[2] The second and third estimates are Giffen's, the fourth is Bowley's, and the last is a Treasury estimate.

The sources of income *assessed for income tax* in 1937 were as follows—ownership of land and houses £573 millions; occupation of land £47 m.; government securities at home and abroad, and interest £293 m.; other dominion and foreign securities £86 m.; manufacturing and extractive industries £485 m.; distribution and transport £505 m.; finance and professions £217 m.; salaries assessed annually £965 m.; weekly wages of manual workers £820 m. See also Chapter Fifteen.

[3] From over £50 millions to £800 millions.

earlier, yet it constituted a smaller percentage of the total resources of the realm.[1] A third inference may be drawn from the estimates of the annual income of the community. The income (in terms of money) per head of the population quintupled in a century although the population itself had trebled.[2]

[1] The national debt was £262 millions in 1792 on the eve of the war with France. At the end of the war it was £885 m. In 1900 it had dropped to £629 m., but the Boer war raised it (1903) to £771 m. On the eve of the first world war it was £661 m., on which the interest was £25 m. After the first world war it fluctuated round about £7,700 m., on which the interest was £357 m. In 1938 it was £8,301 m., on which the interest had fallen to £232 m.

[2] The national income was estimated at £300 millions in the twenties of the nineteenth century, and at £4,600 millions a hundred years later.

Chapter Fourteen

THE NATIONAL ECONOMY (1815–1914)

III. The Organization of Labour

Side by side with the enlarged scope of industrial capitalism in the national economy proceeded its counterpart—the organization of labour. England was the birthplace of trade unionism. In our country it has enjoyed a continuous existence of two and a half centuries, and now occupies a unique position among the forces that shape and mould modern economic life.

The 'Industrial Revolution' did not give birth to the trade union movement. The conflict of capital and labour is far older than the age of machinery. History records examples of strained relations between employers and employed, which often equal and sometimes surpass in bitterness those afforded by the nineteenth century. In one form or another 'social unrest' has manifested itself for six hundred years. The workman's labour is a perishable commodity; he cannot withhold it for long or he may starve. This creates a situation favourable to exploitation, and from mediaeval times down to the present day the energies of the working class have been consumed in the effort to maintain and improve the standard of life. We meet with embryonic organizations confined to wage-earners—the journeymen or yeomen gilds—as far back as the fourteenth century: yet not until the beginning of the eighteenth century did there emerge a genuine trade union movement. Its tardy development was due to two main causes. While the craftsmen as a body were being transformed into a permanent group of wage-earners, the road to independence and mastership still lay open to the more enterprising among them; and so long as it was possible for a certain number of the hired workers to become masters, a stable association was out of the question. The leaders with more vigour and capacity than their fellows would constantly

be absorbed into the higher ranks of the industrial hierarchy. Furthermore the state at first assumed the function of guaranteeing 'a convenient proportion of wages.' It denied the right of working men to determine the conditions of their labour, yet it did not disclaim some responsibility for safeguarding the welfare of the masses.

In the later seventeenth century the obstacles which had hindered the evolution of trade unionism were rapidly disappearing. The prospects of attaining mastership had considerably diminished for all except those who were born to inherit or achieve leadership. Simultaneously under the influence of a full-fledged economic individualism fostered by the development of capitalism, there was a change of public policy. The state began to adopt a different attitude towards industrial problems and allowed the protective code of an earlier epoch to fall into disuse. Capital and labour were now left free in a large measure to pursue the paths marked out by their destinies. The workers were constrained to rely upon their own resources, and shoulder responsibilities which had hitherto been the province of the state. The beginnings of trade unionism must therefore be traced to the growing importance of capitalism, which not only narrowed the avenues to economic independence but was also emancipated from the shackles of an external authority in all relations with labour. It is at any rate significant that the Revolution of 1688, which brought to a final close the era of benevolent autocracy, should have been followed within a few years by an outburst of trade union activity; and this sudden eruption occurred in those industries where capitalist influences were strongest, and where a permanent body of wage-earners imbued with the consciousness of class interests was most firmly entrenched. The conclusion seems inevitable that we must associate the origin of trade unionism in England not with the introduction of machinery and the expansion of the factory system but with the movement successfully engineered by capitalism in the eighteenth century towards *laissez-faire*.

Although trade unionism was a well-established feature of English society prior to the 'Industrial Revolution,' it admittedly received an immense impetus from the changes set in motion by the great inventions. Machinery reduced the operatives to a complete dependency upon their employers, while concentration under one roof made it easier for them to combine together. Nevertheless the right of labour to organize was only very gradually conceded by the state. The movement did not commend itself to the governing class; and in 1799 the combination act made it illegal for the workers to act together in the pursuit of their economic interests. Henceforth any person who joined with others to increase his wages, or decrease his hours, was liable to be charged before a single magistrate (perchance one of his own employers) and, if convicted, sent to prison for three months. The same penalty was imposed if he attempted to persuade someone to leave his work, or if he refused to work with another person. He was also compelled to give evidence against himself—a violation of one of the fundamental maxims of English jurisprudence. The statute was modified the following year, when two magistrates were to act instead of one and they must not be engaged in the same occupation as the defendant.

In connexion with these famous measures it must be noticed, at the outset, that the principle of prohibiting trade unions was not new. There already existed numerous enactments directed against combinations in particular industries. The novelty of the law of 1799 lay in the fact that it was a general law—it penalized all combinations in all industries. Moreover earlier statutes had been framed on the notion that the regulation of wages and apprenticeship was the function of the state, and that trade unions could not be allowed to override and supersede the proper legal machinery. The combination act of 1799 was not framed on this understanding, for Parliament had grown definitely opposed to the regulation of wages or apprenticeship. Indeed it was largely prompted by political motives. The French Revolu-

tion had created a panic, and the government dreading a revolution condemned associations of working men partly from the fear that they would be concerned with political objects. At the same time the operatives themselves put forward claims which in the altered circumstances of the age were clearly impracticable. They demanded the prohibition of machinery and the revival of obsolete laws which limited the number of apprentices and required a seven years' apprenticeship. Prohibition of machinery would have meant economic stagnation. The insistence on a long apprenticeship took no account of the ease with which many technical operations could be learnt. And in view of large-scale production it was no longer possible to restrict the number of employees that a master might engage. Hence by associating itself with a reactionary policy trade unionism seemed to be incompatible with industrial progress.

The modern history of trade unionism may be divided into four periods. The first (1800–1825) was the period of legal repression when trade unions were banned by the law of the land. The second (the twenties and thirties) was the period of militancy and revolutionary tendencies, mainly inspired by the doctrines of the early socialists. The third was the period of construction and organization, and it culminated in the legislative achievements of the seventies. The fourth was the period of the succeeding decades, when unskilled labour was brought within the scope of the trade union movement which now entered into its full heritage as the representative body of the workers. Trade unionism thus followed natural lines of development. Emerging from obscurity and oppression it rioted at first in its newly-found liberty, but finally settled down to the work of building a stable and permanent edifice—gaining its reward in complete legislative and social recognition.

The outstanding figure in the first phase was Francis Place to whose devoted efforts, aided by Joseph Hume in the House of Commons, the repeal of the combination acts

was mainly due. For several years Place worked to procure the repeal yet he worked almost single-handed. The rank and file of trade unionists did not believe that success was possible, and they fastened their hopes for an improvement of their condition upon an extension of the franchise. At length in 1824 Parliament set up a committee to inquire into the question, and this provided an opportunity for stating the case in favour of repeal.

The strongest argument was the oppressive character of the eighteenth-century statutes. The mere act of striking was construed as an infringement of the law. When the Scottish weavers went on strike in 1812, the justices found their demands reasonable; nevertheless the leaders were sentenced to imprisonment. If workmen went in a body to lay their grievances before a master they could be prosecuted for combination; if they agreed to leave his service in consequence of a reduction in wages they were liable to imprisonment; if they held a meeting—even at the employer's request—they had broken the law and were subject to its penalties. Another criticism was that the statutes were unfair: they did not deal out justice with an even hand. Nominally they applied to masters as well as men; in practice it was notorious (as Adam Smith pointed out) that the masters combined with impunity for the purpose of regulating wages. A prosecution was bound to be ineffectual since the law did not compel the masters, as it did the men, to give evidence against each other. Furthermore the combination acts had a pernicious influence because they embittered the relations of capital and labour. They created an atmosphere of suspicion and discord. The men smarted under a sense of grievance. They felt that they were not at liberty to dispose of their labour to the best advantage, and they looked upon their employers as oppressors. The settlement of disputes was also made more difficult. The men were afraid to go to an employer with their complaints for fear of prosecution; instead they met in private and decided on a strike or had recourse to violence. As trade unions were

unlawful, the best men remained in the background and refused to hold office. Acccordingly the extremists took the lead, and there was greater likelihood of outrages. On their side the masters were tempted to take their stand on the high ground of the law and to show less inclination for compromise.

Convinced by the evidence placed before it the parliamentary committee recommended the repeal of the combination acts; and a bill was hurried through both Houses in 1824—'almost,' says Place, 'without the notice of members within or newspapers without.' As a result trade unions sprang up everywhere accompanied by an epidemic of strikes, due partly to an unwonted sense of freedom, partly to a rise in the cost of living. This aroused the employers who had been taken by surprise, and pressure was brought to bear upon the government to re-enact the statutes. Another committee was appointed; but the workers, though they had done little to win the repeal, now exerted themselves to retain it. So successfully was the case of the men presented before the committee that it dared not propose the re-enactment of the statutes. Instead it recommended that the common law, which had also been abrogated in favour of trade unions by the act of 1824, should be restored. The effect would have been to make all associations illegal; so an exception was proposed in favour of meetings held to discuss wages and hours of labour. These recommendations were embodied in the act of 1825, which legalized trade unions solely for the specific purpose of settling wages and hours. Their other activities were still illegal—for example, efforts to limit the number of apprentices, to intervene in the master's conduct of his business, to prevent the employment of non-unionists, to induce any man to leave his work by threats, intimidation or insults. For the next half century the legal position remained unchanged.

The repeal of the combination acts inaugurated the militant phase of trade unionism. Attempts on the part of employers to suppress trade unions had exposed the weakness

of isolated unions and discredited the ordinary methods of collective bargaining. Moreover in 1832 Parliament had been reformed but power was given only to the middle class, and the restricted scope of the Reform Act seemed to show the futility of political agitation. The result was that organized labour became for a time enamoured of socialist aspirations. It is at this stage in the history of the labour movement that the two streams of socialism and trade unionism commingled. For one brief moment, indeed, it appeared as if the trade union structure would be captured by Robert Owen and completely diverted from its traditional lines of development. He laid before working men 'a plan of organization by which they might in a short time emancipate themselves from the thraldom of their present condition.' The 'plan' in his own words was as follows: 'I now give you a short outline of the great changes which are in contemplation and which shall come suddenly upon society like a thief in the night' though without violence or injustice. 'It is intended to include all the working classes in [one] great organization. All individual competition is to cease; all manufactures are to be carried on by national companies. All individuals of the specific craft shall become members, and these shall include all producers of wealth or whatever contributes to knowledge or happiness.' Henceforth, he proclaimed, 'there shall be no more masters, no more servants.' According to the ambitious scheme with which Owen now dazzled the vision of the trade union world, associations of producers were to supersede the capitalist organization of society, and the workers in each industry were to own and control that industry.

To give effect to these ideas there was formed in 1834 the Grand National Consolidated Trades Union, which was designed to unite all the manual workers of the country in one national society. It was attended at first with remarkable success, being rapidly joined by over half a million members including many thousands of agricultural labourers and women. Its exact policy was obscure. The executive apparently

contemplated the gradual transformation of trade unions into co-operative associations, for it recommended the unions to employ their members and to open shops for the mutual exchange of their products; presumably it was intended for each union in this way to get the whole industry into its hands. A general strike was also contemplated, and its actual occurrence in our own times gives added interest to the picture drawn by an optimistic advocate. 'There will not be insurrection; it will simply be passive resistance. The men may remain at leisure; there is, and can be, no law to compel them to work against their will. They may walk the streets or fields with their arms folded; they will wear no swords, carry no muskets; they will present no multitude for the Riot Act to disperse. They merely abstain, while their funds are sufficient, from going to work for one week or one month; and what happens in consequence? Bills are dishonoured, the Gazette teems with bankruptcies, capital is destroyed, the revenue fails, the system of government falls into confusion, and every link in the chain which binds society together is broken in a moment by this inert conspiracy of the poor against the rich.' However the general strike never materialized. Instead the Grand National Union found itself involved in sectional disputes over wages and hours, and in those disputes its energies were largely frittered away. In March 1834 occurred the famous incident of the trial and transportation of the six Dorchester labourers for administering an oath. It created everywhere a great sensation and dealt a fatal blow at the Grand National Union. The employers seized the opportunity to destroy it by dismissing men who would not sign the 'document' (as it was called) in which they were required to dissociate themselves from the trade union movement. The Grand National Union thus disappeared, its members deserting it in thousands.

Although the trade unions had been brought within the pale of the law they still remained outside the social pale.

Public opinion was almost unreservedly hostile. The lord chancellor openly declared in 1834 that 'of all the most pernicious devices that could be imagined for the interests of the working classes as well as the interests of the country at large, nothing was half so bad as the existence of those trade unions.' The question then arises: what were the causes of their unpopularity?

The first ground of complaint against the trade unions was their secrecy. The privacy in which they shrouded their proceedings, and the oaths they imposed, were inspired originally no doubt by motives of safety in an era when it was illegal to hold meetings; but critics of the unions declared that secrecy was favoured because it influenced the minds of the ignorant. The ceremony of initiation into the society was designed to impress the superstitious fears of uneducated members. A pamphlet published in 1834 describes the reception of members into the Wool Combers' Union. The scene, we are told, is usually the first floor of a tavern and the time eight or nine in the evening. On one side of the apartment is a skeleton, above which is a drawn sword and a battle axe; and in front stands a table upon which lies a Bible. The principal officers of the union are clothed in surplices. The proceedings open with a prayer, then the workmen who are about to be made members are admitted with their eyes bandaged. After various preliminaries the bandages are removed from the eyes of the strangers, and they are placed opposite the skeleton. An oath is taken upon the Bible, in which they bind themselves never to 'act in opposition to the brotherhood in any of their attempts to support wages,' nor to disclose the proceedings of the lodge. The oath ends with an imprecation on the violator: 'May what is now before me plunge my soul into the everlasting pit of misery.'

The commonest charge levelled against the trade unions was their alleged tyranny. They were believed in some cases to have instigated the murder of recalcitrant employers and workmen. Apart from violence and outrage the unions were

accused of adopting a dictatorial manner towards the employers. One example is the Builders' Union. A contemporary writer says: 'The lofty and imperious tone assumed in their communications with the masters brings to mind the grandiloquent edicts of Chinese dignitaries. "We consider," says one of these dispatches, " that as you have not treated our rules with that deference you ought to have done, we consider you highly culpable and deserve to be highly chastised." ' They required one master in a strike to pay the sum of four shillings per day to each of his men for every day the strike lasted. A Yorkshire union is said to have ordered the woollen manufacturers to pay time rates instead of piece rates. One of the manufacturers complained that his men did less work when paid on a time basis, whereupon he was instructed to keep no books.

Yet another criticism of the unions was that they did no good even to their own members. It was argued that high wages attracted new hands, whom the union must support to prevent the beating down of wages; and the contributions for such a purpose must come out of the pockets of those in work. The members must also bear the cost of officials and meeting-rooms, and suffer curtailment of employment due to a rise in prices and a consequent fall in demand. Again those who arrogated to themselves, not always with justice, the right to speak in the name of political economy declared the impossibility of a general increase in wages as a result of trade union pressure. The theory of the 'wages-fund' was at this period the orthodox explanation of wages. It was believed that at any given moment a fixed portion of the wealth of the country was set apart to pay wages, so that if any section of the workers raised their wages by compulsion they did so at the expense of their fellow workers. And lastly trade unions were condemned on the ground that it was disastrous to put any restrictions on capital. A rise in wages, ran the contention, meant a rise in prices which would endanger the whole fabric of foreign trade, and workmen would be the first to suffer for their misguided efforts to

improve their position. 'Were we asked,' said a writer on trade unionism, 'to give a definition of a trade union we should say that it was a society whose constitution is the worst of democracies, whose power is based on outrage, whose practice is tyranny, and whose end is self-destruction.'

It is a testimony to the solidity of the trade union movement that, in the face of powerful hostile criticism and an antagonistic public opinion, it was able to win for itself a great place among the constructive forces of the nineteenth century. In the thirties barely tolerated by the law of the land and bearing the stigma of a social ban, trade unionism within half a century had achieved full legal recognition and even a distinct measure of social prestige. Trade union officials were no longer contemned as paid agitators but were accorded seats in the legislature and on royal commissions, and the altered attitude of employers was reflected in a growing willingness to meet union representatives around a common board. The causes and consequences of the transformation must now be examined.

After the failure of the Grand National Union the fever of militancy burned itself out. The glowing projects of 'Owenism' were discarded, and trade unionism entered on an era of fruitful activity and sober practical administration. One reason for the change was the prosperity of the country during the fifties and sixties: another was the growth of a new spirit among trade unionists. The desire for knowledge, the anxiety to comprehend the realities of the industrial situation, became more general. The new spirit manifested itself in the institution of classes for the discussion of economic problems, and in the publication of trade journals dealing with the interests of particular industries. In one of these trade journals remarkable stress was laid on the value of education. 'If you do not wish to stand as you are and suffer more oppression, we say to you get knowledge and in getting knowledge you get power. Let us earnestly advise you to educate: get intelligence instead of alcohol—it is sweeter

and more lasting.' Moreover trade unionism in itself exercised a sobering influence over the workers, for it gave them a training in self-government. Ludlow, chief registrar of friendly societies, thought this result 'the most important produced by the trade society, and one which no other form of government as yet evolved among the working class can develop on so large a scale. No greater mistake,' he added, 'can be made than, as journalists and politicians are apt to do, to treat the mass of members of a trade society as dupes, idlers, drunkards or incapables, their leaders as knaves, strikes for higher wages as their common object. They represent almost invariably the bulk of the able, industrious and provident workmen in each trade: they are habitually well governed by men fairly elected by the members as the most trustworthy, respectable and intelligent amongst them.' The effect of trade unionism upon the character of the worker was warmly disputed. Hostile critics asserted that the better elements were losing their qualities of self-reliance and independence—their desire to excel and rise in the world being damped by the thraldom in which they were held by the rules of their union. Yet the trade unions maintained that the real tendency was to raise the character of the worker by making him feel that he was not the helpless victim of an industrial machine but the member of a strong united body, capable of defending his rights and ensuring him a resource in case of temporary need.

The spread of education, coupled with the experience gained in trade union administration, evoked a great reaction against the militant ideas of the thirties which showed itself in a strenuous denunciation of strikes. One union warned its members against what it called the dangerous practice of striking. 'Keep from it,' they were urged, 'as you would from a ferocious animal that you know would destroy you. We implore you brethren, as you value your own existence, to avoid in every way possible those useless strikes.' The Smiths' Union prided itself on being the original 'anti-strike' society. The preface to the rules states that at

first it had indulged freely in strikes, but in 1845 a meeting of delegates decided that strikes were an unmitigated evil; they were 'battles between the employers and the employed, too often unwisely got up by one or both parties and continued more for the purpose of trying which shall gain the mastery over the other than otherwise.' In many cases the local branches were deprived of the power of calling a strike, for it was recognized that the authority of a branch committee was more liable to be overborne by the clamours of the rank and file. As a result the spokesmen of trade unionism were able to claim that the effect of the movement was to diminish the frequency as it certainly lessened the disorder of strikes.

The growing moderation of trade unionism, alike in its aims and methods, did not imply that the leaders were prepared to acquiesce in economic oppression; but they believed that their ends could be best attained by other means. Accepting the view which was then almost universally prevalent—that wages depend upon supply and demand, and that when the demand for labour exceeds the supply wages rise—they drew the conclusion that the best line of policy was to limit the supply of labour in any given trade and to restrict the amount of work which any individual might do. One device for executing this policy was to reduce the number of apprentices; another was to get rid of surplus labour by emigration; a third was to discourage piece-work and overtime in order to make the work last longer or go round a larger number of men.

It was during the forties and fifties and sixties that the structure of trade unionism in its modern form was built up on sound lines. The keynote of the period was organization, which was marked by three features—first, the creation of a body of trade union officials; second, continuity of membership; and third, increased financial strength as a result of combining industrial with friendly benefit activities. When the unions began to expand in membership it became necessary to have whole-time secretaries; and so there arose

a class of trained officials expressly chosen for their business capacity, and uniting a sense of responsibility with a more intimate knowledge of the economic situation. There can be no question that the growth of such a class was a fundamental factor in laying the foundations of modern trade unionism. Another vital development was the evolution of a 'new model' of trade unionism, as it was then called. Instead of the trade union being purely a 'trade' society, concerned mainly with protecting the professional interests of its members, a type of union emerged which in addition to its industrial functions was a benefit society serving the purpose of an insurance society. It had the two-fold result of securing for the unions additional members and bigger funds. It also re-inforced the hold of a union over its members, since any member who was expelled for disobedience might forfeit the superannuation and other benefits. The outstanding example of the 'new model' was the Amalgamated Society of Engineers established in 1851 out of a number of independent societies. In process of time the defects of the 'new model' were revealed in the unwillingness of the officials to hazard the funds of their union by aggressive action. The aim, in fact, appears to have been to create uniformity of wages and hours throughout the country rather than to engage in constant endeavours to better them. It was the combination of financial solidity and moderation of purpose which effected a revolution in the public attitude towards trade unions, and thus made it possible for them in the seventies to win a much improved legal status.

The movement must now be studied in another light. It is a mistake to consider trade unionism exclusively from one angle: as an industrial society for regulating wages and hours, and as a friendly society for providing benefits. It has played an important role in raising the whole level of working class life, and takes rank as one of the great social forces of the nineteenth century. This aspect has not received the attention which it deserves. The history of the miners' union,

in particular, furnishes a striking record of achievements. Macdonald, the president of the Miners' National Association, claimed before the royal commission of 1867 that the act of 1842 prohibiting the employment of women and children in the mines was due solely to the representations of the workers. Among other reforms the union pressed for more stringent laws to ensure the safety of the miners, more efficient inspection of the mines, uniform methods of weighing the coal and the right to have a check-weigher at every pit, the prohibition of truck,[1] the punctual payment of wages and the education of the children. Fifty thousand miners signed a petition in 1854 for a compulsory assessment on their wages to raise money for educational purposes. In short the miners' union placed foremost among its objects 'legislation for the better management of mines to protect the miners' lives, promote their health, and to increase among them a higher moral status in society.' Critics of trade unionism, who fastened exclusively upon its agitation for higher wages, ignored its other activities in pressing for legislative changes which otherwise might have been indefinitely retarded.

Side by side with the growing moderation and enlarged vision of organized labour proceeded another change. Ludlow in his book *The Progress of the Working Class* published in 1867 observed that 'the offensive spirit of mastership, which sought to carry everything with a high hand and settle all matters without considering the wishes or interests of the workers, has also greatly softened within the last few years. The capitalist is beginning to acknowledge the propriety of considering the welfare of the workers whose help he needs. He has almost ceased to insist upon his right to do all things in his own way simply because the capital is his.' The more tolerant mood of employers bore fruit in two directions. One was a greater willingness to meet their men around a common board; the other was a readiness (in some instances) to foster community of interests between capital

[1] Truck wages were paid in commodities instead of money.

and labour by admitting the latter to a share in the profits of the business.

Notwithstanding, the old type of employer who declined to recognize the trade union movement—or to concede the principle of collective bargaining—yielded ground slowly. He was represented at the royal commission of 1867 by Nasmyth, a distinguished engineer and a relentless opponent of trade unionism, who refused to deal with men except 'one at a time.' Yet Nasmyth's own career furnished an instructive commentary upon the results which his attitude towards organized labour provoked. 'I was so annoyed with walking on the surface of this continually threatening trade union volcano that was likely to burst out at every moment, that I was glad to give it up and retire from the business at a period of life at least ten years before the age at which I otherwise would have retired. And I am the envy of some engineers. They say: "You are a lucky fellow, Nasmyth; you took down your sign-board at the right time." ' The new type of employer sought to solve the labour problem in other ways than by taking down his sign-board. Mundella, an example of the enlightened leader of industry who had moved with the times, rejected the 'old feudal notion' of dealing with men singly, which made it possible to 'weed out the men that have any independence and screw down the rest to any terms.' He endeavoured to encourage more friendly relations between capital and labour on the lines of arbitration and conciliation. 'This system has been a complete educational process for our men; they know as well as we do whether we can afford an advance or not; they know whether the demand is good or bad; and they are accustomed to consider the effect of a fall or rise [in prices].' In other quarters the principle of profit-sharing was attracting attention in the sixties as a means of attaining industrial harmony. Thus the pressure of trade unionism was gradually winning for the worker a new status as an equal partner to the industrial contract; and, in the face of so momentous a development, employers were constrained to recognize that

their business was no longer their business alone. It was the starting-point of a new order of things.

We come to the decade of the seventies when trade unionism registered a fresh advance in the clarification of its legal position.

The legal insecurity of the trade unions was brought home to them by an event which occurred in 1867. The unions had begun to accumulate large funds, and the amount then exceeded a quarter of a million pounds. It was suddenly discovered that these funds had no legal sanction. The Boilermakers' Society summoned the treasurer of a Bradford branch for embezzlement. The magistrates ruled that, as unions did not come under the Friendly Societies Act, their funds could not be protected. The decision was confirmed upon appeal, when the judges also declared that the union was illegal on the ground that its objects were 'in restraint of trade.' To understand the judicial pronouncement it must be remembered that the act of 1825 had legalized trade unions expressly for two purposes, and two purposes only—the regulation of wages and hours. Now nearly all trade unions had rules relating to piece-work, overtime, the number of apprentices, etc.—rules which, according to the law of the land, were 'in restraint of trade.' Hence trade unions were unlawful associations and their funds therefore were unprotected. The year that witnessed this legal bombshell saw the political emancipation of the working class when the Reform Act of 1867 extended the franchise in towns, and the unions were not slow to use the influence they had acquired. The liberal government in 1871 recognized their power by bringing in a bill under which no trade union was to be considered illegal on the ground that it was 'in restraint of trade;' every union could be registered as a friendly society and so receive protection for its funds; and no trade union could be sued in a court of law. It seemed as though trade unionism had secured everything which it desired, but the bill was found to contain a serious flaw. Although the

unions obtained full legal sanction, their action was restrained by the prohibition of peaceful picketing. Four years later a conservative government in its turn recognized their power by legalizing a limited degree of peaceful picketing.

The seventies also witnessed an attempt, started by Joseph Arch, to spread trade unionism among farm labourers where the movement had always been extremely backward. In all other industries the advent of the 'Industrial Revolution' did away with the isolation of the worker. The factory system served to concentrate great masses of men under one roof, and the result was not only to render possible concerted action among them but to imbue them with a consciousness of economic strength. The agricultural changes during the same period produced the opposite effect. The open field method of cultivation vanished from the face of England, and with it went the intermixed holdings and joint husbandry. The inhabitants of a village no longer toiled side by side in the fields, associated together in a general partnership and carrying on in common all the chief operations. The English countryside was now covered with hawthorn hedges and ring-fenced farms, and the labourer stood alone like the tiller of the soil in Millet's famous picture. The scattered condition of the rural population appeared to offer an invincible obstacle to the development of a vigorous trade union. The individual farm worker lacked the sense of security which is instilled into a crowd by the confidence born of numbers. Moreover his exiguous resources did not easily stand the strain of a weekly contribution to the trade union funds. The difficulty of conducting propaganda in the teeth of these discouragements was almost insuperable.

Many thousands of farm labourers had joined Robert Owen's movement (in the thirties), but the latter soon collapsed. After an interval of forty years a new campaign started in Warwickshire under the inspiration of Joseph Arch. It attracted the attention of the press and public

sympathy was aroused. The National Agricultural Labourers' Union was formed and soon counted nearly a hundred thousand members. Other trade unions came to its support, realizing that underpaid labour in agriculture was a menace to organized labour in towns. The farmers retorted with a lock-out. They were unwilling to concede the right to combine or the right to strike. The struggle which had commenced auspiciously was not maintained. Agriculture began to enter upon a period of acute depression owing to the influx of American wheat. In the altered circumstances it became useless to struggle for higher wages, since arable land was everywhere being laid down to grass with a consequent reduction in the number of men employed. The membership of the National Union fell off rapidly and ultimately it barely exceeded a thousand.

In the most recent period of modern trade union history the first outstanding event was the emergence of unskilled labourers. The great mass of workmen were outside the trade unions. It is true that, as in the case of Owen's union, they were sometimes brought within the movement yet it was a temporary phenomenon. The reasons for their exclusion were the high weekly contributions and (in some unions) the fact that admission was only through apprenticeship. 'The great bulk of our labourers,' wrote a prominent leader, 'are ignored by the skilled workers. It is this selfish snobbish desertion by the higher grades of the lower that makes success in many disputes impossible.' There was thus a real danger that the trade unions would be confined to superior workers, the aristocracy of labour, and isolated from the unskilled section—with a consequent cleavage in the world of labour.

The situation was transformed by the great dock strike in 1889, one of the landmarks in the history of trade unionism because victory was achieved in spite of weakness. The success of a strike by the women employed in making lucifer matches, although they lacked funds and organization, followed by the success of the gas workers who won a reduc-

tion of hours from twelve to eight, stimulated the efforts to raise the status of the dock labourers. The dockers too were devoid of funds and organization, but public opinion rallied to their support and they gained their demand of sixpence an hour. Unions came into existence among dockers, railway servants and others, which at first were intended to be fighting unions unencumbered with sick or accident funds. They sought to bring about an improvement in the working conditions, and the funds were to be used solely for purposes of strike pay. In other words they were purely trade societies. This was known as the new trade unionism—the 'new model' of the eighties—yet actually there were always unions with only trade objects, just as there were always unions which combined trade objects with friendly benefits. The reasons why the unskilled workers favoured the trade society were partly that a union which was not burdened with friendly benefits was believed to be a better fighting instrument, less cautious and more aggressive; and partly that it was necessary to have a low contribution in order to attract the poorly paid. The refusal to combine insurance benefits with trade functions was short-lived, but the permanent effect of these years remained in the increased solidarity of the wage-earners. The older unions modified their exclusiveness, and greater sympathy was henceforth shown with the unskilled labourers.

Early in the twentieth century trade unionism found its legal position once more assailed. In 1900 a strike, at first unauthorized, occurred among the employees of the Taff Vale railway company in South Wales. The strikers committed certain unlawful acts, and the railway company against the advice of its own lawyers sued for damages not the workmen but their union—the Amalgamated Society of Railway Servants. The case was taken to the House of Lords, where it was decided that a trade union could be sued for any injury or damage done by any person deemed to be acting as an agent of the union. The decision implied that a union was responsible for unlawful acts

even when committed by an agent contrary to its express instructions. The Amalgamated Society had not authorized the strike nor the unlawful acts, yet it was compelled to pay a substantial penalty. In 1906 the Trade Disputes Act gave a trade union immunity from civil action on account of any unlawful act 'committed by or on behalf of the union.'

Shortly afterwards followed the Osborne judgment. In 1908 a member of the Amalgamated Society took legal proceedings to prevent the union using its funds for political purposes, and the House of Lords returned a verdict in his favour. The law lords determined, first, that trade unions were to be deemed corporate bodies; second, that as such they existed for certain defined purposes; third, that the latter were laid down in acts of parliament; and fourth that since political action was not expressly referred to in those acts it must be considered outside the scope of trade unions. The result of the judgment was to stultify all their activities not specifically mentioned, for example, even educational work. In 1913 the Trade Union Act allowed a trade union 'to include in its constitution any lawful purpose,' so long as its chief objects were those of a trade union as defined in law, but in the case of political objects expenses were to be met out of a political fund, from which any member was at liberty to claim exemption by 'contracting out.' After the general strike of 1926 which lasted nine days,[1] the act of 1927 substituted the system of 'contracting in' for 'contracting out,' that is, a member did not pay the levy unless he entered into a contract to do so. This act was repealed in 1946 by the labour government which restored the former practice.

In other directions the movement made notable advances since the early years of the present century. There has been a great expansion of membership and the number of trade

[1] The general strike involved about $1\frac{1}{2}$ million workpeople. In the strikes of this year (1926) the aggregate duration of working days of all disputes amounted to 162 millions, as compared with an annual average of $3\frac{1}{4}$ millions in the years 1927–38.

unionists runs into several millions,[1] while the financial strength of the unions is shown by their accumulated funds. The unskilled workers, organized at the end of the eighties, now account for a large percentage of the total membership. The organization of women workers was stimulated in particular by the first world war. The majority are members of trade unions admitting both men and women, though some belong to unions which are confined to women. In the case of agricultural labourers the earlier trend has revived. Another noteworthy feature has been the extension of the movement to what is sometimes termed the black-coated proletariat—shop assistants, clerks, teachers, civil servants, actors, journalists, bank officers and law court officials. One important development is the National Union of Railwaymen, which affords a striking example of a 'new model' of trade unionism (this is the third use of the term we have noticed): what is commonly called to-day 'industrial unionism.' The structure of a trade union may assume various forms. A craft union embraces men engaged on the same kind of work, for instance, cutlers or bricklayers. Occupational unionism comprises people working on processes which are kindred, such as engineers. Industrial unionism exists when the union brings together under one comprehensive umbrella everybody connected with the employer: the National Union of Railwaymen endeavoured to include employees at railway hotels, railway printing works, and so forth. In short, instead of the workers being grouped on the basis of their occupation, they are grouped on the basis of the industry to which they belong.

In these latter years organized labour not only won a unique legal status but it also came to enjoy an official status in all affairs which implicated manual workers. This measures the remarkable advance made by trade unionism since the days when the movement was proscribed by law. Even before the first world war the trade unions had been

[1] In 1938 there were 1,021 trade unions in Great Britain and Northern Ireland, with a membership of six millions.

made agents of the state in the administration of the Insurance Act. During the war organized labour secured the greatest influence in all matters which affected labour. Trade unions have now gained the right to be consulted by the government; their position is fortified by state recognition; their dignity, prestige and strength are proportionately enhanced. Two other developments may be briefly recorded. The first is the constitution of trade unionism as a definite political movement. The second is the claim of organized labour to participate in the control of industry. Its activities are no longer confined to problems such as hours and wages: its horizon has widened and it seeks a share in the management of industry.

The future of trade unionism must depend in a considerable measure upon the discretion evinced by the leaders, and upon the discipline displayed by the rank and file, in using the extensive powers conferred on them by a privileged legal status. Yet so far as its past history is concerned, it can fairly claim the credit of notable achievements in ameliorating the condition of the wage-earners. Firstly: it has been an important factor in raising the standard of life of the workers because it has enabled them to reap fuller benefit from improvements in the economic situation. Secondly: it is almost universally recognized that collective bargaining is necessary to place employers and employees on a footing of equality—otherwise it is more difficult for the wage-earners to make their voices effectively heard. Thirdly: trade unionism protects a good employer against those competitors who seek to capture the market not by superior efficiency but by scaling down the wages bill. Fourthly: trade unionism leads on the whole to stability in industry. It discourages 'lightning' strikes—not indeed invariably but as a general rule—for where the workers are organized they tend to have a deeper sense of responsibility, and they feel more secure in the knowledge that their interests are safeguarded by their own expert officials. Most employers, in fact, prefer to deal with representatives of orga-

nized labour since it serves to diminish friction in running the industrial machine. In this connexion it may be noticed that the loss of working hours due to strikes is relatively negligible: over a period of years it does not average more than one-half of one per cent. of total working time, and is much less than the loss caused by sickness or unemployment. The evil of such stoppages lies elsewhere—in the embitterment of the relations between employers and employed. The moral effects of trade unionism in inducing a feeling of confidence, and increasing the self-respect and dignity of the workers, must also be taken into account. Finally trade unionism, wherever the members of the union are alive to their obligations, affords a training in democracy. These moral and political consequences of trade unionism have an economic reaction, because they promote greater competence and so help to create the type of artisan that modern conditions necessitate: for machinery demands of the worker intelligence, high character and regularity of conduct.

Chapter Fifteen

THE REVIVAL OF ECONOMIC NATIONALISM (1914–1939)

For a century after the fall of Napoleon the growth of English society was undisturbed by any serious menace to national security. Shielded in its impregnable island home by the navy and by continental alliances, it pursued the arts of peace and gave full reins to the untrammelled development of the economic system. Then in the brief space of twenty-five years it was twice exposed to titanic convulsions, which shook the foundations of national life and necessitated the mobilization of all its resources in a stupendous effort to wrest victory from the very jaws of defeat. The two world wars produced epoch-making changes in England's economic policy, involving a momentous departure from the orthodox principles that held sway in the nineteenth century. After the first world war she was confronted with the broad issue whether she should adhere to her existing economy, which was exposed to the vicissitudes of international trade and combined prosperity with instability; or whether she should return to the notions of an older economy based on self-sufficiency. The choice which she made repudiated the concept of economic internationalism based on specialization and reverted to economic nationalism which had appeared extinct. After the second world war whose effects are being worked out before our eyes, she embarked upon the task of circumscribing the sphere of private enterprise—another deeply cherished concept of the pre-war era. The principles of *laissez-faire*, qualified only by the restraints arising out of social legislation, had seemed practicable in an age when this country was relieved from the fear of invasion and sea-power gave it an unchallenged pre-eminence. Once these

conditions ceased to prevail, a situation parallel to that which existed before the nineteenth century restored the state to its former position of authority and control in the economic order; and the prospect opened up a vista of far-reaching possibilities. In the present chapter we shall review the outstanding feature of the troubled decades which bridge the two world wars—the resurgence of economic nationalism when the English people discarded the historic tenets of free trade and substituted a commercial system bristling with a plethora of restrictions—tariffs, imperial preferences, 'quotas,' and bilateral treaties. In the reversion to a mercantilist viewpoint long discredited the wheel had come full circle, and the clock of history appeared to have been put back a hundred years.

When the inter-war period (1919–39) is compared with the opening years of the present century one unmistakable element in the national economy clearly emerges—namely, the contraction in the oversea trade with its sharp repercussions upon the prosperity of a vital group of export industries and upon the volume of unemployment. The true meaning of the contraction can best be appreciated if it is set against the general position in international trade, by which is meant the total of exports and imports of all countries. International trade rapidly recovered from the effects of the first world war. Already in 1924 it approximated to its level in 1913, and on the eve of the great depression (1929–33) it was one-third higher. It then decreased but the set-back was only temporary. While international trade expanded, our share of it declined. Before the first world war the United Kingdom (including Ireland) accounted for one-sixth of the world's imports and one-seventh of the world's exports; yet in the two succeeding decades the percentage of imports fell frequently below its former level, while that of exports was always considerably below it. As a result the percentage of our national production which was exported began to shrink: it was 30.5 in 1907, 27 in 1924,

22 in 1930, and after the depression the fall continued. This meant that instead of shipping abroad a third of our national output we sent eventually only about a fifth.[1] The principal reason was a change in world economy which caused our older industries to lose their former markets. The nineteenth-century equilibrium based on the international division of labour was bound to be disturbed when countries emerging from a purely agricultural stage turned to a less homogeneous structure. With the aid of protective tariffs they sought to develop their own manufactures, and this limited their dependence upon English staple commodities—especially cotton products which formed a substantial part of our exports. Now a reduction in the total volume of exports is not necessarily an indication of national decline: it may imply that less capital is being invested abroad or that the terms of trade have moved in our favour (that is, imports can be purchased more cheaply). But inasmuch as the industries engaged in the export trade cannot adjust themselves overnight to the altered situation, there ensues a serious maladjustment in the economic balance of the exporting country which is reflected in a considerable increase of unemployment.

The plight of the staple export industries was one of the crucial phenomena of the inter-war years. The statistics of coal, cotton, shipbuilding, iron and steel bear eloquent testimony to their depressed condition in the years 1919–39. In the coal industry the number of workers diminished by one-third (namely, four hundred thousand), and the export of coal was reduced to about three-fifths. It has been surmised that the oversea demand for English coal was affected by substitute products, electricity and oil. In reality the loss of our external markets was due to the development of coal-mining abroad (the result of a world shortage of coal during the war) and to foreign competition in neutral spheres. A similar explanation covers the decay of the cotton

[1] It was a smaller percentage of a larger total, since the volume of national production had increased.

industry, which formerly had been *par excellence* an export industry since the home market absorbed only one-fourth of its production of cloth. Here also the number of workers diminished by one-third (namely, two hundred thousand), and the export of cotton piece goods was reduced to about one-quarter. The growth of the Indian cotton industry under the protection of a tariff (3½ per cent. *ad valorem* 1914 and 25 per cent. 1933) deprived Lancashire of its largest oversea customer; and the severity of Japan's competition may be gauged from the fact that eventually her exports exceeded our own by nearly 50 per cent. The consequent redundancy of spindles and looms raised an acute problem of surplus productive capacity. The protracted delay in securing agreement to schemes of reorganization was mainly the sequel of financial inflation during the boom of 1920, which left a legacy of over-capitalization (in many concerns the nominal value of the share capital was trebled) and heavy debt charges.

The difficulties of the shipbuilding industry were created by the transition from a war to a peace economy. Its yards had been enlarged to meet war-time needs; while other powers too, especially the United States, built ships. After the war the rise in freights led to an increase of one-third in total world tonnage: the subsequent drop in freights lessened the demand for new merchant vessels. Both the number of workers in the shipbuilding industry, and the tonnage of merchant vessels built in its yards, diminished ultimately by almost one-half. As a result the United Kingdom owned only one-fourth of world shipping instead of two-fifths; it built for foreign owners only one twenty-fifth of its total output instead of one-fifth; it launched only one-third of the world mercantile marine instead of three-fifths. In addition disarmament meant fewer warships, and these had been responsible for a considerable proportion of our pre-war tonnage. Thus the productive capacity of the shipbuilding industry was in excess of peace-time requirements. The situation was worsened in the thirties by

economic nationalism to which even this country succumbed, for it contracted the carrying trade. A report on tramp shipping (1933) declared that in consequence 'British tramp shipping has been brought to the edge of bankruptcy.' The iron and steel industry, whose production was greatly extended during the war of 1914–18, was confronted with a similar problem of redundant capacity. Other nations had pursued a policy of expansion and our exports were adversely affected. In the group of export industries here surveyed not only was the total number of workers reduced, but unemployment among those who were retained was much above the normal percentage.

Public attention came to be focussed primarily upon the most distressing symptom of the economic malaise—unemployment, which was generally regarded as 'comparatively speaking a new phenomenon.'[1] Actually the problem has persisted for hundreds of years. Before the 'Industrial Revolution' it is probable that at least 5 per cent. of the working population was unemployed owing to normal factors such as variations in consumers' demands, seasonal fluctuations, dependence on intermittent water-power. Trade depressions (for instance in the reign of James I) increased the percentage. In addition unemployment was due to 'technology,' that is, improvements in industrial technique: during the nineteenth century it may be safely assumed that operatives were displaced when machinery worked by women and children was introduced. Unfortunately we have no precise statistics of unemployment before 1920. The trade union returns cover alone the organized and skilled workers among whom the rate of unemployment was probably below the general rate; and the early figures are based on very few records. The average was 5 per cent. in good years and 10 per cent. in bad years. The severity of the depression at the end of the seventies and in the eighties—when prices, interest and profits fell—produced figures comparable with those which impressed themselves upon the public

[1] So it is described in official reports on unemployment.

mind as 'a new phenomenon' after the first world war. Ironfounders, iron shipbuilders and boilermakers reached 22 per cent. and engineers 13 per cent. Although this depression excited much concern, other decades in the nineteenth century had also registered a high percentage of unemployment.[1]

If unemployment is not new, neither is the public awareness of it though the degree of sensitiveness has become more acute. It was a frequent complaint in earlier centuries that the local authorities neglected to discharge the duty laid upon them of finding work for the unemployed. Even those who conducted a campaign against 'the dangerous tendency' to extend the functions of government were constrained to admit (as an influential journal did in 1857) that 'this is a case where an economic law should yield to a social law to avert as far as possible the terrible strain on one class of the community.' During the American Civil War when the cotton famine brought distress to Lancashire, Parliament authorized government loans to the local authorities for putting the unemployed on relief work. This created a precedent for the 'Circular' issued in 1886 recommending municipal employment for the 'respectable unemployed' instead of leaving them to the poor law unions; and the principle was embodied in the Unemployed Workmen Act (1905), which contemplated farm colonies where men could be trained in husbandry. Next came the institution of labour exchanges in 1909—followed two years later by compulsory unemployment insurance on a contributory basis and administered by the state, which afforded a guarantee of minimum subsistence for those thrown out of service through no fault of their own. The Unemployment Insurance Act of 1911, however, was restricted to a very few industries; it was extended in 1920 to over eleven million wage-earners and

[1] The highest percentages in any decade recorded in *The Statistical Tables and Reports on Trade Unions* (1888), were as follows: *Engineers*—9·8 (1858), 8·3 (1868), 13·3 (1879), 7·4 (1886). *Ironfounders*—16·0 (1858), 18·0 (1868), 22·3 (1879), 13·9 (1886). *Iron Shipbuilders and Boilermakers*—20·4 (1879), 22·3 (1885), *Blacksmiths* reached 15·9 (1885).

subsequently its scope was widened still further. The policy of financing public works was continued by making special grants to local authorities in aid of improvements such as roads.

Although neither unemployment nor the effort to alleviate it is novel, the English people have grown more deeply conscious of the gravity of the problem. One reason is that exact figures are now available owing to the system of insurance instituted after the war of 1914-18. Another reason is that the war markedly expanded the volume of unemployment. The normal economic equilibrium was disturbed by the substitution of a war economy for a peace economy. To meet the insatiable demands of the war such industries as coal-mining, shipbuilding, iron and steel were inflated by an increase in the number of workers, and once these demands ceased the process of adjustment to peace-time requirements proved slow and intractable. The inevitable changes in oversea markets due to industrial developments in other countries also had profound repercussions on those branches of the national economy which catered for the export trade. The third reason is that this unemployment was not evenly spread over the whole country but was largely concentrated in the 'depressed' areas, so that it assumed a more sombre aspect than when it was expressed simply as a percentage of the insured workers. The fourth reason is that the community has grown more sensitive to the economic wastage and social misery caused by unemployment—the loss in production, the deterioration in skill, the decay of apprenticeship, the privations of poverty, and the lowering of morale. The fifth reason is that the workers are more articulate and the organs of public opinion pay greater attention to the problem.

The number of unemployed varied. At the end of 1921, when the slump in trade which followed a fleeting post-war boom was at its worst, it was nearly two millions or 16 per cent. of the insured workers. Then down to the thirties it averaged 11 per cent.—that is, roughly one and a quarter

million people (one in nine) were unemployed prior to the great depression of 1929–33. This does not mean that the same persons were in continuous unemployment the whole time. The personnel of the unemployed kept changing. There was a 'hard core' comprising those out of work for long periods, especially in the coal-mining industry, but the main portion was unemployed for short periods. How far was the first world war responsible for the situation? To answer the question we must look at the statistics of unemployment during the preceding decade, when trade union returns show an average of 5 per cent. Allowing for their incompleteness and a different basis of calculation, the broad conclusion emerges that one of the economic consequences of the war of 1914–18 was to double the normal percentage of unemployment. Another illuminating fact is that nearly one-half of the unemployed was concentrated in the 'depressed' (or 'special') areas—south Wales, Lancashire, the north-east coast and south-west Scotland—which contained only about a quarter of the total population. In these areas were situated the staple export industries of coal, cotton and shipbuilding. The problem of unemployment was thus in a large measure a problem of the export or 'unsheltered' industries; and their plight is shown further in the fact that though the insured workers increased by three millions between 1920 and 1939, the numbers engaged in the export industries diminished. The benefit of the increase went to the 'sheltered' industries which catered for the home market. Coal, cotton, shipbuilding, iron and steel not only registered a marked decline in the numbers of their workers, but their percentage of unemployment was higher than the average for all industries: in shipbuilding it sometimes exceeded one-third, in iron and steel one-quarter.[1]

We must also inquire why the disparity between pre-war

[1] The percentages of unemployment in leading industries were as follows—*Coal* 15 (1925), 41 (1932), 22 (1938). *Pig iron* 25 (1925), 44 (1932), 16 (1938). *Steel* 26 (1925), 48 (1932), 24 (1938). *Shipbuilding* 35 (1925), 63 (1932), 21 (1938). *Cotton* 11 (1925), 44 (1930), 28 (1938). *Woollen and Worsted* 21 (1925), 36 (1931), 22 (1938).

and post-war unemployment persisted ten years after the war was ended.[1] The answer is partly to be found in another consequence of the war—the decline in emigration. Formerly there existed an outlet for the surplus elements in the labour market, and we exported men as well as goods and services. In 1913 the excess of British emigrants over immigrants was a quarter of a million;[2] in the next decade it averaged roughly one-third of the figure. On this basis of comparison the net decrease of emigration during the twenties approached two millions, of whom male adults were approximately one-third. It is reasonable to infer that, if the pre-war rate of emigration had been maintained, the disparity between pre-war and post-war unemployment would have diminished year by year, and perhaps it might have been almost completely eliminated. Either the unemployed in the 'depressed' areas would have been numbered among the emigrants, or they would have been recruited by prosperous industries which were expanding in size. In the thirties there were even more British immigrants returning to the homeland than there were emigrants leaving these shores. The checks on migration in the inter-war period (1919–39) were of two kinds—voluntary and involuntary. The voluntary check was the social services which mitigated the worst effects of destitution, and so tended to immobilize labour and weaken the incentive to face the hazards of a new life abroad. It is difficult to assess the extent to which this check operated, since the arrest of emigration was not confined to England but was general throughout Europe. The involuntary check lay in the legislative restraints imposed on immigration by other countries, especially the United States. It was part of a universal restrictive system which after the first world war hindered the free movement of persons, commodities and capital. Efforts were made under the Empire Settlement

[1] The explanation is commonly found in the rigidity of the price structure, which in turn was ascribed to an inflexible wage structure. This overlooks the prime causes of the decline of the export industries noticed above. Another alleged factor, the return to the gold standard, is considered below.

[2] See Chapter Thirteen.

Act of 1922 to stimulate emigration but they were unsuccessful. One reason may have been the requirements laid down by the countries of immigration; another reason was doubtless that settlement on the land had lost much of its appeal.

In the first decade following the war of 1914–18 there was a prospect that England would weather the storm and gradually recover from the dislocation of her oversea markets without any departure from the traditional lines of her currency and fiscal policies. In the course of the twenties her exports steadily rose: in 1920 they were 30 per cent. below the pre-war (1913) level but in 1929 only 13 per cent. Then with startling suddenness the position of the export industries gravely deteriorated under the influence of an economic blizzard, which swept over the world with the force of a tornado and created a widely different international framework. The great depression (1929–33), the most dramatic episode that occurred between the two world wars, cannot be ascribed to a single cause. In its broad aspect it takes its place in the normal sequence of booms and slumps which follow each other in our productive processes with unfailing regularity. The volume of economic activity is not uniform but expands and contracts in a sort of rhythm. This alternation which has always characterized progressive communities (the trade cycle is over three hundred years old[1]) appears to obey a natural law whereby an outburst of violent energy is succeeded by lassitude and recuperation. The unprecedented severity of the great depression was aggravated by the fact that a cyclical fluctuation in industry was combined both with a structural change in agriculture due to mechanization—which came later to farming than to manufactures and increased the output of primary commodities in excess of effective demand—and with a virtual cessation of foreign loans which provoked a financial crisis abroad. Apart from the main causes, there were all kinds of

[1] See Chapter Six.

contributory influences in operation—the legacy bequeathed by the war of 1914–18 in the shape of inflated industries, violent changes in the price level, fluctuating currencies and high taxation; rationalization designed to eliminate duplication of plant, together with 'technology' designed to replace men by machines; the rigidity of the domestic price structure which delayed the adjustments needed to bring the national economy into harmony with the downward trend of world prices; misdirected international lending which encouraged debtor countries to live beyond their means; the political situation exacerbated by acrimonious controversy over reparations and war debts and disarmament.

The catastrophic effects of the great depression are writ large over the whole decade preceding the second world war, for whose advent it was partially responsible. The economic and financial chaos that it brought in its train was reflected in a score of staple commodities of which world prices were nalved,[1] while the gold value of international trade dwindled to one-third. The sequel to these sweeping reductions was shown in the volume of unemployment for the sixteen principal industrial nations: in 1932 it was three times as great as in 1929. A more permanent consequence was the immense impetus given to an unbridled economic nationalism by the frantic efforts of each country to protect itself from a flood of cheap imports. One and all they took steps to insulate the domestic price level against the collapse of world prices, and to insulate domestic employment against the erratic course of international trade. Nevertheless the resurgence of economic nationalism was not due solely to economic factors. There was behind it also a political driving force, whose objective was to buttress national security with the pillars of a strategic economy (especially the building up of heavy industries which could provide armaments). The widespread revulsion against a world economy based on

[1] The price of cotton in 1938 was one-third of its price in 1924; the price of wool was halved.

specialization dominated the situation at a critical time when war clouds were gathering on the horizon. We have now to see how England in her turn was drawn into the maelstrom.

The great depression produced upon this country a reaction which was out of proportion to the cause. It is true that for a space the volume of unemployment was more than doubled,[1] yet the percentage was lower than in other leading countries. Nor was the great depression due to maladjustments in our own economic structure but to influences which were world-wide. We suffered from a temporary decline in the purchasing power of our customers overseas, the result of a slump in the prices of their products, and it was responsible for an adverse balance of trade; yet we had enjoyed a long succession of credit surpluses and could well afford occasional deficits. The determining element in the situation was really psychological. A wave of pessimism passed over the nation and induced the belief that its economic interests were no longer bound up with those of the world at large. The opinion became general that international trade and finance were a source of danger to our general well-being, and that it was necessary to insulate ourselves against forces which were beyond our own control and threatened at any moment to bring disaster. From a short-sighted view of a grave emergency proceeded events of the first magnitude, for England's abrupt abandonment of the two main pillars of her economy—the integrity of the pound sterling and the open door in commerce—was due to an atmosphere of 'defeatism' emanating from the great depression, in which the nation blinded by panic hastily and without thought of the ulterior consequences discarded its historic policy. This startling development was aided by the fact that for a decade the existence of over a million unemployed had weighed heavily upon the national spirits, and created an attitude of mind favourable to far-reaching changes—although, as we have shown, the excess of

[1] In 1932 it was nearly 3 millions or $2\frac{1}{4}$ times the amount in 1929.

unemployed over the pre-war figure was only about half a million, and it was owing to the aftermath of war, the slow adjustment to altered conditions, and the decline in emigration. The prevailing pessimism reached its climax during the great depression, and the conviction was then almost universal that England's race was run, that her industry had been stricken with a mortal disease, and that on the national scroll of her economic achievements must be inscribed the word 'Ichabod.'

The new direction given to the economic statecraft of England in the reversal of her traditional currency and fiscal policies had massive consequences. The one ushered in an international repudiation of the gold standard and unmoored the currencies of the world from their safe anchorage: the other widened the circle of the protectionist countries by eliminating the chief bulwark of the free trade movement. The dissociation of the national currency from gold and the abandonment of free trade marked England's capitulation to a system of economic nationalism.

The term 'gold standard' means that a national currency is converted into foreign currencies at fixed rates of exchange in gold. When a country is 'on' the gold standard it accepts the obligation to conform to an international basis of exchange rates. When it goes 'off' the gold standard it substitutes monetary nationalism for monetary internationalism and determines exchange rates by its own arbitrary action. Thus the issue involved is whether a country prefers monetary autonomy or monetary collaboration. The former enables it to regulate the domestic price level and support the volume of purchasing power at home, but is liable to wide fluctuations in the value of the currency abroad. The latter ensures that the value of the currency remains steady abroad, but requires the domestic price level to keep in step with the world price level even at the cost of a serious dislocation of industry. England had suspended the gold standard during the war of 1914–18 and

restored it in 1925 at the pre-war parity, that is, she exchanged the pound for exactly the same number of dollars as before 1914. It is often asserted that the pound sterling was given an external value higher than was warranted by its internal value as expressed in purchasing power. The deterioration in the position of the export industries was attributed to the alleged overvaluation of the pound, yet actually the total volume of our exports increased: in 1929 it was over 8 per cent. greater than in 1924.

Six years after the return to the gold standard England again suspended it owing to a situation which was not of her making. One of the phenomena of international finance during the decades 1919–39 was the accumulation of immense liquid assets known as 'nervous' or 'hot' money. These floating balances, which at the beginning of 1931 were estimated at two thousand million pounds distributed between the different money centres, flitted from country to country in the form of short-term credits in lieu of long-term investments—accordingly as they were attracted by the high rates of interest or repelled by apprehension of political or financial insecurity. They became a menace to the normal operation of the gold standard, because they involved the abrupt transfer of large amounts of gold, whereas in earlier days only small amounts were moved to balance trade transactions. The London market, instead of discouraging the influx of precarious and fugitive deposits of foreign money, utilized them to make advances to German banks. Early in 1931 it found its resources seriously strained by the locking-up of substantial funds abroad under a 'stand-still' agreement, whereby its claims upon Germany were held in abeyance—that is, its assets became 'frozen.' At the same time there was foreshadowed a deficit on the budget, which raised fears of monetary inflation. Misgivings were enhanced by the adverse balance on our international payments. The credit balance, which we had hitherto possessed year by year, was converted in 1931 into a debit balance.

These various factors combined to impair confidence

abroad in the soundness of England's financial situation. In a race for security foreign creditors hastened to transfer their deposits in London to other money centres. After unavailing efforts to check the flight from the pound, the government suspended the export of gold (September 1931) in order to put an end to the drain on its depleted gold reserves. The involuntary repudiation of the gold standard was an event of more than national significance, for it gave a profound shock to the international monetary system and threw all currencies into disorder. Within a year over forty states had followed England's example; the United States did so in 1933; France, Netherlands and Switzerland not until 1936. Our position in the world economy almost necessarily involved the alignment of other powers in their currency policy. Altogether the pound depreciated 40 per cent. This meant that it was worth only three-fifths of its former value in gold, but its value in terms of other currencies was much less affected since they too suffered depreciation. The confusion which ensued from the break-down of the gold standard had the most demoralizing impact on the structure of world prices which suffered a fresh collapse; and the results were seen in the constriction of world trade, in the chaos of exchange rates, in the raising of tariffs, in the institution of 'quotas,' and in the impulse given to economic nationalism. These grave international repercussions particularly concerned a country like England, who was vitally dependent upon oversea commerce and upon the income which she drew from shipping freights, investments and other financial services abroad.

One of the main reasons advanced in favour of the suspension of the gold standard was the adverse balance of trade. There is a widespread misconception about the balance of international payments. It is popularly supposed that a surplus of exports over imports is an indication of prosperity, and a surplus of imports over exports is a premonition of disaster. Yet a debtor country may have an export surplus owing to the discharge of its liabilities, and a

creditor country may have an import surplus owing to the receipt of interest on its investments abroad. To avoid misunderstanding, we must bear in mind that exports are both visible (commodities) and invisible (services). The latter include the income from oversea investments, shipping freights, insurance premiums, bankers' commissions and charges, brokerages, tourist expenditure, emigrants' remittances home, authors' royalties and other items. England had an adverse balance of trade in respect of visible exports, but she had a favourable balance in respect of invisible exports which cancelled out the adverse balance on merchandise and also gave her a net surplus. The surplus was considerable.[1] It was due principally to the interest on investments abroad coupled with shipping freights; and it enabled the English people to maintain a higher standard of life than would otherwise have been possible. The value of our oversea investments on the eve of the first world war is estimated at £4,000 millions. During the war over £600 millions were requisitioned and sold by the government, and it is believed that £150 millions were lost in the belligerent countries. However, owing to the growing yields from old investments combined with new investments, there was an increase in money income.[2] The value of the investments on the eve of the second world war is estimated at £3,750 millions. The receipts from shipping were also very large, because about three-fourths of our imports and exports were carried in British ships.[3] The net surplus on international revenue transactions was one of the sources of capital for new investments. Another source was the sinking

[1] In the three pre-war years 1907, 1910 and 1913, the credit balance amounted to £138, £153 and £181 millions respectively. After the war the amounts (in millions of pounds) were as follows: 154 (1922), 153 (1923), 86 (1924), 54 (1925), 9 (1926—the year of the coal strike), 114 (1927), 137 (1928), 103 (1929). Incidentally these figures do not lend support to the statement that, owing to the return to the gold standard at the pre-war ratio in 1925, 'the British balance of payments was labouring in difficulties.'

[2] It was £210 millions in 1913, and averaged £240 millions between 1922 and 1929.

[3] They amounted to £94 millions in 1913 and averaged £130 millions between 1922 and 1929.

funds on and maturity repayments of oversea loans; and a third was the money derived from foreign purchases of home securities. Altogether a considerable sum was rendered available year by year for making fresh investments in territories abroad.

Let us see what happened in consequence of the great depression. The credit balance of our international payments was converted (1931) into a debit balance.[1] Hence England now had an adverse balance not only on merchandise but on her total current account, and in five out of the next seven years she continued to have deficits although they were much smaller. These debit balances were usually offset by the proceeds which became available from the sinking funds on and maturity repayments of oversea loans. As a result the value of our capital assets abroad was impaired, yet this did not mean (as a chancellor of the Exchequer deplored) that we were 'living upon our capital.' We might be making at the same time substantial additions to our capital assets at home, for instance, the erection of new factories and plant. On the eve of the second world war, when the debit balance of our external payments was £55 millions,[2] internal investment in capital equipment was expanded by £376 millions so that the net investment at home and abroad in this year (1938) was £321 millions. In any event the disappearance or reduction of our former credit balance was mainly due to the decline in the yields from oversea investments and from shipping and financial services, caused by the slump in world prices and the contraction in international trade.

The suspension of the gold standard was immediately followed in England by the abandonment of free trade.

[1] In 1930 the credit balance was £28 millions: in 1931 the debit balance was £104 millions.

[2] In 1938 the estimated net income from (1) oversea investments = £200 m. (2) shipping = £100 m. (3) short interest and commissions = £35 m. Total = £335 m. The excess of imports of merchandise and of government payments made overseas = £390 m. Debit balance = £55 m.

As early as 1921 a Safeguarding of Industries Act afforded protection to certain 'key' industries, officially described as 'articles of a pivotal character which were regarded as vital to the national safety or of outstanding importance to industry.' Thereby a breach was made in the ramparts of the fortress, however justifiable may have been the occasion, and it facilitated the subsequent capitulation to the besieging forces. The nation became accustomed to a marked modification of its traditional fiscal practices, and grew disposed to accept without demur the more drastic changes for which the ground was being prepared. Moreover a campaign conducted before the first world war had won over one of the political parties to the cause of imperial preference. Nevertheless the conservative government which appealed to the electorate in 1923 in favour of protection suffered a reverse, showing that at heart the country still remained wedded to free trade. When protection was eventually adopted, it came in by the side door: it was a hasty improvisation born of panic. Just as free trade itself owed its final victory over the last defences of mercantilism to 'the rain that rained away the corn laws,' so the nation was stampeded into protection by the collapse of the great bulwark of British credit, the pound sterling. In the face of a dire calamity, their minds filled with dark forebodings that the currency might follow the way of the German mark (although the circumstances were completely different), the people accorded to the 'national government' the blank cheque, the free hand which was demanded. After the general election in 1931 the 'national government' proceeded to fill in the blank cheque with the word 'protection.' It was explained that protective duties were necessary to reduce the volume of imports, and 'redress the highly adverse trade balance which was one of the main factors in the flight from the pound in 1931.' A doubtful proposition: but in any case the argument was invalidated by the depreciation of the currency which at the time furnished substantial protection. The Import Duties Act (1932) provided that each industry

should present an application for its own requirements to a body known as the Import Duties Advisory Committee. By entrusting the responsibility into the hands of a technical commission, it was hoped to eliminate the discreditable practices prevalent in other countries of exerting political pressure upon the administration with the object of manipulating the tariff schedules.

The extent and character of the protective system may be indicated in general terms as follows. Whereas only one-seventh of our imports had formerly been taxed (for purposes of revenue) the proportion was now increased to nearly three-fifths, and those remaining on the free list were mainly Empire products. The average duty on manufactured goods approximated to one-fifth of their value. In the case of agriculture conflicting needs made themselves felt. The aim of protecting the farmer was at variance with the desire to encourage imports from the dominions; and the interests of countries like Denmark, whose economy had become dependent upon the English market, could not be entirely ignored. A variety of devices was adopted. The best method of assisting an 'infant' industry, or any other industry whose maintenance is considered necessary for national reasons, is the payment of a subsidy—raised from general taxation since the burden ought to fall on the community as a whole and not on the section which consumes a particular product: this method was adopted in the sugar beet industry. More open to criticism was the Wheat Act: it imposed a levy on flour to establish a fund out of which native wheat-growers received a subsidy to make up the difference between the guaranteed price and the market price. The levy was a tax upon bread of which the poor are the largest consumers—'It is a tolerable safe prophecy [Morley the biographer of Cobden had written half a century earlier] that no English statesman will ever revive a tax upon bread.' Still the subsidy was preferable to an import duty, for it was only paid on the quantity produced at home which was one-fifth of the total supply. Subsequent measures extended the system

of guaranteed prices to barley, oats and milk. Other foodstuffs, meat, dairy produce, vegetables and fruit, were made subject to tariffs. Lastly the quantitative restriction of imports was introduced. Some foreign commodities were assigned 'quotas' which limited the amount admitted into England: they included bacon, meat, potatoes and seafish. Subsidies, tariffs and 'quotas'—supplemented by the concession of immunity from local rates and by favoured treatment in the payment of income tax—failed to arrest the decline in the number of agricultural workers: cultivated land continued to shrink although the acreage under wheat and sugar beet was expanded. The description of England in the late seventies, as a country which was becoming less and less of a farm and more and more of a meadow, a garden and a playground, seemed truer than ever before. One very useful though belated development may be mentioned here, namely, afforestation. 'Aye be sticking in a tree,' was the counsel of an old Scottish laird to his son, 'it will be growing when you're sleeping.'

Nothing evinces so clearly the decay of the traditional maxims of commercial relationships as the trend towards bilateral trade, which balances commodity exports and imports with each nation. Here also England returned to an older standpoint, the doctrine of 'the particular balance' which was held by some of the early mercantilists but was eventually discarded in favour of 'the general balance.' Bilateralism is destructive of the multilateral system where commodities are bought in one market and sold in another—thus enabling all parties to choose the markets best suited for their requirements—and where a state strikes the balance on the whole of its international transactions. In an expressive seventeenth-century phrase bilateralism breaks 'the links and chains by which all traffics hang together.' For one thing, when the stream of commerce is diverted into artificial channels, the total volume of exports is likely to suffer contraction. For another, the encroachment of bilateralism can only be viewed as a retrograde step. It sets up false

criteria which measure the benefits of a world economy not by the advance in the standard of living but by 'the particular balance' of trade with each territory; and it poisons the atmosphere of international economic co-operation. No country was more deeply concerned in the maintenance of multilateral trade than our own. By offering a market to the products of every land we provided each with the means to buy foodstuffs, raw materials and manufactures from our customers, our debtors and our colonies. All this was to our direct advantage, but in addition we received back a considerable share of our payments for imports in the form of shipping freights, while we drew a large income through financing the movement of commodities by commercial credits. The substitution of a bilateral trade policy was part of the short-sighted opportunism which jeopardized the durable factors of national prosperity in order to snatch at a temporary benefit. The claim that the use of a bargaining weapon—namely, the threat to restrict imports from a state which resisted pressure to buy English goods—would enable us to increase our exports, by forcing them upon reluctant markets, is refuted by the fact that our exports failed signally to recover. In another direction the nation which had once led the world in economic thought, and (more important still) in enlightened economic practices, displayed during the inter-war period (1919–39) a remarkable avidity for absorbing the most fashionable economic nostrums. We adopted the system of 'quotas' by which limitations were placed on the quantity of imports which a government was willing to accept. Quantitative control of trade was another rediscovery of the twentieth century, for it re-introduced in a modified form the mercantilist device of prohibition since it involved a stoppage of imports once the 'quota' was exhausted.

The ultimate consequences of the revolutionary change in English fiscal policy—unless it is reversed—may not work themselves out in one generation. Perhaps for several decades they will continue, as hitherto, to be masked by counteracting

influences. None the less, as economic conditions throughout the world return in the fulfilment of the years to the normal, the renunciation of free trade must exert on England its cumulative and far-reaching effects. An immediate result was to alter the proportions of Empire and foreign trade. The proportion of our imports from the Empire increased by one-third (they rose from 30 per cent. to 40 per cent.); that of our exports to the Empire increased by one-ninth (they rose from 45 per cent. to 50 per cent.). This diversion was the outcome of the Ottawa Agreements concluded between the mother country and the dominions in 1932. The former undertook not to levy duties on Empire products already on the free list; to strengthen the duties on certain foreign imports; and to adopt the 'quota' system for meat. Six years later the Anglo-American Trade Agreement secured concessions for farmers in the United States, which modified the preferential position accorded to the dominions. The real criterion which should be applied to the new commercial policy is how it will eventually react upon the total volume of commerce, the extent of the carrying trade, the vitality of the banking and insurance services, and the maintenance of a relatively high standard of living. The shape of things to come lies hidden in the future. The historian can only place on record that during the first decade of protectionism our visible and invisible exports remained on a lower level, and imports (as well as unemployment) on a higher level, than they were before the institution of tariffs. It would be wrong to isolate a single factor, however important, and to overlook other elements in a complex situation; but at any rate protective duties and bilateral trade agreements did not succeed in solving our economic problems.

Already it is possible to measure the reaction produced upon other states by our renunciation of free trade. To begin with, it had a restrictive influence on their commerce and so contributed to the resurgence of economic nationalism. Moreover it had a marked psychological effect, inasmuch as

it profoundly discouraged the forces beyond our frontiers which were inspired by our example to work for the breaking down of the barriers to international intercourse. So long as England adhered to her century-old policy, she was the outstanding argument in favour of a universal reduction or abolition of tariffs: her failure to maintain this policy in a grave emergency seemed to her former admirers almost in the light of a betrayal. Again the reversal of her trade practices focussed attention upon the vexed problem of raw materials. While she offered an open door to imports, all countries were enabled to purchase their requirements in any part of the Empire by the sale of their products to the motherland; hence there was less disposition to challenge her monopoly of a vast sector of the globe with its wealth of raw materials and foodstuffs, when the trade of other nations suffered from no handicaps. And lastly her oversea investments amounted to several thousand million pounds, and both interest and repayment were made in goods. In a long view of the situation England's fiscal policy needed to be shaped by the broadest conception of her fundamental interests—and these concerned her commanding position in international trade, her mercantile marine, her oversea investments, her banking and insurance services abroad, and the obligations of her world status.

England emerged eventually from the trough of depression. Primarily the recovery was due to the natural forces of recuperation. After all neither booms nor slumps are permanent, and there is bound to be a swing of the pendulum. As stocks became exhausted, the demand for foodstuffs and raw materials and manufactured products revived; and the wheels of economic activity were once again set in motion. The movement was world-wide, and of all countries England was the least likely to be unaffected by world forces. Nevertheless recovery was only partial. The staple export industries manifested a melancholy decline; our income from invisible exports (investments, shipping, banking) contracted; and

the balance of our international payments ceased to be in our favour.[1] The percentage of unemployment did not return to its pre-depression level—whereas formerly one in nine was unemployed, in 1938 one in eight was out of work. There is however another side to the picture, namely, a growing improvement in the standard of living of the wage-earners. During the post-war boom which reached its peak in 1920, when the cost-of-living index was 176 per cent. higher than in 1914, wages soared. Labourers earned between three and four times as much as they did in 1914; the average rise for all grades of workers was 170–180 per cent.; and the length of the working week was reduced to 44–48 hours (as compared with 48–60 hours before the war). Then in 1921 wage rates slumped rapidly and at the end of the next year they were stabilized at about 70–75 per cent. above the pre-war level. The actual increases varied from industry to industry. Thus labourers in the building industry received double; railway porters and dock labourers more than double; cotton workers, coal-miners and skilled engineers about half as much again.[2] The cost-of-living

[1] The statistics of oversea trade in 1938 were as follows. Exports of British produce and manufactures amounted to £471 millions. Nearly four-fifths were articles wholly or mainly manufactured. In order of magnitude they were machinery, cotton manufactures (now displaced from the premier position), vehicles (locomotives, motor cars and cycles, ships, aeroplanes), iron and steel, coal, woollen manufactures, etc. Textile yarns and fabrics accounted for 18 per cent of the total exports. South Africa received the largest share of our exports, followed by Australia, India, Canada and the United States (who now took only 4 per cent.), etc. Imports amounted to £920 millions (of which £62 millions were re-exported). One-half was food, drink and tobacco, one-quarter raw materials, and one-quarter articles wholly or mainly manufactured. In order of magnitude they were meat, grain and flour, butter, wool, petroleum, tea, etc. The United States sent us one-eighth of the imports. She was followed by Australia, Canada, India, New Zealand, etc. Our exports went half to the Empire and half to foreign countries. Our retained imports came roughly equally from the Empire and foreign countries as to food and raw materials, but foreign countries sent much more manufactured articles.

The invisible exports and the balance of international payments in 1938 are noticed above.

[2] The following are weekly wages in certain occupations in 1924 (and in brackets in 1938). *Agricultural labourers* 28s. (34s. 7d.). *Engineers, skilled* about 60s. (70s.). *Engineers, labourers* 40s. (50s. 4d.). *Bricklayers* 73s. 5d. (73s.). *Building labourers* 55s. 6d. (55s.). *Railway labourers* 49s. (47s.). *Railway porters* 45s. (43s.). *Boot and shoe operatives* 57s. (58s.).

index was 74 per cent. higher in 1923 than in 1914: this implies that wages in general had barely kept pace with the cost of living, but in the next half-dozen years the index fell ten points while nominal (that is, money) wages kept steady. Hence in these years real earnings rose, and the recipients of wages and salaries enjoyed a larger share of the national income for fewer hours of labour (about 63 per cent. as compared with about 55 per cent. in 1911).[1] The remuneration of employees was enhanced by the value of the social services—unemployment and health insurance, old age pensions, education, working class housing.

The great depression, though it augmented the amount of unemployment, had in compensation a beneficial influence on the standard of living of those who remained in work. In spite of the depreciation of sterling the fall in world prices of primary products was so sharp that imports of foodstuffs and raw materials were decidedly cheaper. Accordingly real wages improved,[2] and so the wage-earners had a wider margin for extra expenditure. The average diet in the worst year of the depression was actually better than in the relatively prosperous years preceding it. Between 1929 and 1938 the quantity of imported butter even increased 50 per cent.—at a reduced cost it provided seven ounces a week per head of the population in 1938—and the consumption of other commodities (including tobacco) registered a substantial advance.[3] Altogether if the condition of the working community on the eve of the two world wars is compared

[1] The net national income in 1938 is estimated at £4,595 millions. (Rent of land and buildings = £373 m. Profits and interest = £1,351 m. Salaries = £1,081 m. Wages = £1,790 m.) Personal expenditure on consumption = £3,467 m. Expenditure by public authorities (excluding the post office, etc.) = £807 m. Private net investment (additions to capital assets) = £321 m. For the sources of income assessed for income tax, see Chapter Thirteen.

[2] The cost-of-living index fell to 140 in 1933 (1914 = 100). It rose to 156 by 1938, but this was still below 1929 (when it was 164).

[3] The quantities of imports (in lb.) retained for home consumption per head of the population in 1913 (and in brackets in 1938) were—*butter* 9·88 (approximately 23); *cheese* 5·47 (approximately 7); *wheat and flour* 298·24 (347·45); *sugar* 95·13 (100·53); *tea* 6·68 (10·18); *tobacco* 2·10 (4); *meat* 55·80 (approximately 76); *eggs* number 56·17 (approximately 70). Home production should be added for all these commodities (except tea and tobacco).

the rise in real income is impressive,[1] while there is a marked extension in the size of the working community since the total number of persons in employment was much higher. It is noteworthy that a considerable decline occurred in the proportion of families living below the 'poverty line,' that is, the minimum subsistence level as defined by social investigators. What promoted a rise in real income was a conspicuous growth in the volume of industrial production in the inter-war decades.[2] Technical progress not only enlarged the output of the older industries but also made possible the newer industries mentioned below.

An important result of the redistribution of the national income was the expansion of the home market into which native capital and energy, diverted from the export industries, were now flowing. The increased purchasing power of the great mass of the nation stimulated the demand for better staple commodities (houses,[3] clothing, etc.), for the services which accompany a higher standard of living (hotels, entertainments, etc.), and for the products of the nascent industries—in particular automobiles and rayon. The origin of the automobile is linked with the invention of the internal combustion engine, the discovery of oil fields which supplied the fuel, and the removal of legal restrictions—an act of 1865, enjoining horseless vehicles not to exceed four miles an hour and to be preceded by a man with a red flag, was repealed in 1896 when the maximum speed was fixed at fourteen miles. The first decade of the twentieth century witnessed the rapid adoption of motor vehicles both for

[1] Progress between 1924 and 1938 is shown by the rise in wages (6 points); by the fall in the cost of living (19 points); by the increase in deposits in post office savings banks in the United Kingdom (from £280 millions to £509 m.) and in trustee savings banks (from £107 m. to £239 m.).

[2] In 1929 industrial production was nearly one-eighth—and in 1937 one-third—higher than in 1924.

[3] The annual average number of houses built in 1925–29 was about 203,000, and in 1934–39 it was 348,000. The building boom was stimulated by the low rates of interest—the bank rate stood at 2 per cent. from June 1932 to August 1939. Membership of building societies in Great Britain was doubled between 1924 (one million) and 1938 (two millions); and the share capital was five times as large.

private and commercial uses. On the eve of the first world war they counted three hundred thousand: on the eve of the second nearly ten times as many,[1] for the experience of mechanized warfare made the English people automobile-minded, and the technical training then given to large numbers of men and women provided a reservoir of labour for mechanized occupations. Rayon illustrates the importance of research and experiment in starting new industries or developing old ones. It is produced mainly from wood pulp to which chemical processes have been applied. The manufacture dated from the closing years of the nineteenth century; it was French in origin but England wrested the lead. Another synthetic industry was dye-making. Its scientific basis had been laid in the seventies by British chemists, though others reaped the profit since nine-tenths of the synthetic dyes used here were 'made in Germany.' War, which ruthlessly lays bare the weak spots in a nation's defences, disclosed the degree to which England was dependent upon imports of vital products—synthetic dyes needed for uniforms, drugs for health, optical instruments required for a variety of purposes together with optical glass to make them. These 'key' industries now received protection; and the growing of sugar beet was also encouraged with the aid of a subsidy. The measures taken to free this country from its reliance on foreign sources for certain 'pivotal' articles recall the efforts made in the spacious days of Queen Elizabeth to foster new branches of economy in which England was behind the Continent.

One natural consequence of these structural changes—that is, the rise of new industries focussed primarily upon the home market in preference to the export market—is reflected in the expansion of employment which catered for domestic consumption. Between the two world wars

[1] In Great Britain. The increase has been accompanied by a slaughter of human life on the roads. The number of fatal accidents caused by vehicles was approximately 10 a day in 1924 and 18 in 1938. Non-fatal accidents numbered 260 a day in 1924 and 520 in 1938. The number of horse-drawn vehicles fell from 181,416 (1924) to 9,274 (1938).

the distributive trades absorbed a million more insured workers; services of all kinds (national and local government, professional, hotels, laundry, entertainments, sports) three-quarters of a million more; the building industry a third of a million more; motor vehicles, cycles and aircraft a quarter of a million more; the electrical industry a quarter of a million more; food, drink, tobacco and transport a fifth of a million more.[1] A second development has reversed a historic trend. For a century and a half the major manufactures (textiles, iron and steel) had shown a tendency to migrate northwards. The new manufactures of a semi-luxurious character began to move to the south and the midlands, especially in order to be nearer the greatest centre of the home market—the metropolitan area. The redistribution of industry has been affected by a third factor. When industry was dependent on steam as its motive force, it tended to congregate in close proximity to the coal-fields. Now electric power, which can be transmitted from a generating station over great distances, may promote the decentralization of industry. This will mean the reversal of yet another historic trend. The sharp lines of demarcation between town and country will become increasingly blurred with the return to an older system under which industry was widely dispersed. The need for decentralization is shown by the fact that four-fifths of the population dwell in urban areas, and over one-half is concentrated in five industrial districts[2] which embrace only one-tenth of the realm.

[1] The number of workers insured in Great Britain in 1938 amounted to nearly 15 millions. Among other industries and services they were classified (in round figures: thousands) as follows—*distributive* 2,100; *building* 1,380; *textiles* 1,130; *transport* 900; *engineering* 860; *coal* 860; *metal trades* 740; *agriculture* (*farming, forestry, gardening*) 720; *national and local government* 630; *clothing* 625; *food, drink and tobacco* 590; *hotels, restaurants, clubs, etc.* 500; *vehicles* 460; *paper and printing* 445; *iron, steel and other metals* 335; *commerce, banking and insurance* 280; *woodworking* 250; *chemicals* 245; *gas, water and electricity* 225; *professional services* 215; *laundry* 180; *shipbuilding* 175; *entertainments and sports* 150; *bricks and tiles* 110; *pottery* 75; *leather* 70; *glass* 50; a variety of other industries and services about 500.

[2] Greater London, round Birmingham, Lancashire and the West Riding of Yorkshire, Glamorgan, round Glasgow and Edinburgh.

EPILOGUE

A hundred years ago an eminent French author, Taine, wrote: 'Germans make intolerable hypotheses, Frenchmen make none, Englishmen do not even suspect that one could make any.' In the foregoing pages I have endeavoured to demonstrate the hypothesis that the tide of human affairs is governed by the law of flow and ebb; and that the swing of the pendulum constitutes the agency whereby all extremes are eventually brought under control. In the middle ages English society assumed a corporate character, in which economic conduct was required to conform to an ethical pattern. The dissolving forces of individualism burst the cramping bonds imposed by communal discipline, and substituted the standard of enlightened self-interest. Now the wheel is beginning to come full circle. In a world economy with its baffling complexities and international repercussions, and under the pressure of an awakened social conscience, the driving-force of the individual needs to be supplemented by the collective forethought of the community and the dictates of social justice. This modern trend involves a return to many of the older concepts of economic organization and policy.

* * *

Accordingly it behoves us to profit by the experience of the past. The study of English economic development affords valuable lessons which have a profound application at the present day. They are best conveyed in three striking quotations from seventeenth-century writers.

'England never throve by trade but while she was an universal merchant.'

'The merchants of England are an industrious people and lovers of trade. They do not upon small—no, not upon great—discouragements give it over.'

'No people ever yet grew rich by policies; but it is

peace, industry and freedom that brings trade and wealth, and nothing else.'

Upon a free commercial system, and upon the maintenance of the spirit of initiative and enterprise, it must depend whether England will continue to play in the future a part commensurate with her role in former centuries.

* * *

Napoleon described the English people as 'a nation of shopkeepers.' The reply to the taunt was foreshadowed by one of England's great prime ministers at the end of the eighteenth century: 'It has been the theme of historians that as nations became mercantile they lost in martial spirit, that it is of the essence of trade to be sordid, and that high notions of honour are incompatible with the prosecution of traffic.' Pitt claimed that England's record exposed the falsity of this view; and the imperishable achievements which are woven into the tapestry of the last hundred and fifty years do not belie the essential truth of his contention.

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