INDUSTRIES, IDEAS, AND THE STRUGGLE FOR REFORM, 1815–1848

In the period of some 30 years preceding 1815 two "revolutions" had been taking place. One was the upheaval associated with the French Revolution and the Napoleonic empire. Basically, it was mainly political, having to do with the organization of government, public power and authority, public finance, taxation, administration, law, individual rights, and the legal position of social classes. The other "revolution," a revolution in a more metaphorical sense, was primarily economic, having to do with the production of wealth, the techniques of manufacture, the exploitation of natural resources, the development of new technologies, the formation of capital, and the distribution of products to consumers. The political and the economic revolutions in these years went on somewhat independently of each other. Until 1815 the political revolution affected mainly the Continent, while the economic revolution was most active in England. The Continent, while renewing itself politically, remained economically less advanced than England. England, transformed economically, remained conservative in other respects. Hence it has been possible to deal with the political significance of the French Revolution and its Napoleonic sequel without much discussion of the Industrial Revolution, as the economic changes then occurring in England are always called.

It may be (the matter is arguable) that the Industrial Revolution was more important than the French Revolution or any other. In a telescopic view of world history the two biggest changes experienced by the human race in the past 10,000 years may have been the agricultural or Neolithic revolution, which, beginning about 8000 B.C., ushered in the first civilizations, and the Industrial Revolution, which ushered in the modern global civilization of the last two centuries. However that may be, it proves on closer examination that

Political and economic factors

the economic and the political, the Industrial Revolution (or industrialization) and the other institutions of a society, cannot be kept apart in the historical study of modern times. The Industrial Revolution occurred first in England, becoming evident about 1780, because of certain political characteristics of English society, because earlier commercial and naval successes had expanded England's access to world markets, and because English life offered rewards to the individual for a spirit of risk-taking and innovation. Nor can the effects of political and economic revolution, in England or elsewhere, be kept apart for the years after 1815.

With the defeat of Napoleon and signing of the peace treaty at Vienna in 1815, it seemed that the French Revolution was at last over. European conservatism had triumphed; since it restored European monarchies and frankly opposed the new "French ideas," it can appropriately be called "reaction." But the processes of industrialization, as they accelerated in England and spread to the Continent, worked against the politically conservative settlement. Industrialization greatly enlarged both the business and wage-earning classes, and made it harder for monarchs and landed aristocrats to maintain their control over public power. Industrial development in the nineteenth century was often called "progress," and economic progress proved stronger than political reaction.

Industrial society arose in England, Western Europe, and the United States in the nineteenth century, within the system known as capitalism. In the twentieth century, after the Russian Revolution in 1917, industrial societies were created in which capitalism was vehemently rejected. Industrialism and capitalism are therefore by no means the same. Yet all industrial societies use capital, which is defined as wealth that is not consumed but is used to produce more wealth or future wealth. An automobile is a consumer's good; the automobile factory is the capital. What distinguishes a capitalist from a noncapitalist society is not the existence of capital but the ways in which the capital is controlled. The distinctions sometimes become blurred. In one form of society the control of capital is through private ownership, or institutions of private property, by which capital is owned by individuals, families, or corporations that are in turn owned by shareholders—in any case not by the state. In such societies, though ownership may be widespread, most capital is controlled by relatively few people, responding to market forces. In the other form of society productive capital in principle belongs to the public and is in effect owned and controlled by the state or its agencies; such societies usually call themselves socialist, because the first socialists rejected the principle of private ownership of the means of production, that is, of capital. In these societies the control of capital, or decisions on saving, investment, and production, are also in the hands of relatively few under some form of central plan.

Industrialism versus capitalism

In Europe the institutions of secure private property had developed gradually since the Middle Ages, and much that happened in the French Revolution was designed to protect property from the demands of the state. Possession of property was held to be the basis of personal independence and political liberty, and the expectation of keeping future profits inspired, in some, a willingness to commit their capital to new and uncertain ventures. It made possible an entrepreneurial spirit. There had been a commercial capitalism in Europe at least since the sixteenth century. Industrialization in Europe was therefore capitalist. Countries outside the West-European orbit, and industrializing later, faced a different problem. A country in which little capital had accumulated from the trade and agriculture of previous generations, and which had few owners of capital or enterprising individuals, could hardly industrialize by European methods. If it lacked the European background, in which various political, social, legal, and organizational features were as important as the

conomic, it would have to achieve industrialization by a combination of other methods. his usually meant that innovation, planning, decision making, control, and even domina-on rested largely with the state.

In the short run, within a few years, the Industrial Revolution in Western Europe avored the liberal, modernizing principles and legal rights proclaimed in the French Rev-lution. In the middle run, or in half a century, it made Europe overwhelmingly more pow-rful than other parts of the world, leading to a worldwide European ascendancy in the orm of imperialism. In the still longer run, by the twentieth century, it provoked a retalia-on, in which other countries tried hastily to industrialize in self-protection, or to improve ne condition of their peoples, hoping to catch up with Western economies and nation-tates while loudly denouncing the West as imperialist and capitalist. Of these newer ndustrial societies the Soviet Union, until its dissolution in 1991, and the People's Repub-ic of China, from 1949 into the twenty-first century, would be the most prominent.

52. THE INDUSTRIAL REVOLUTION IN BRITAIN

On the whole, from the beginning of history until about 1800, the work of the world was lone with hand tools. Since then it has been increasingly done by machines. Before about 800 power was supplied by human or animal muscle, reinforced by levers or pulleys, and upplemented by the force of running water or moving air. Since then power has been sup-lied by the human manipulation of forms of energy found in steam, electricity, the com-ustion of gases, and most recently within the atom. The process of shifting from hand ools to power machinery is what is meant by the Industrial Revolution. Its beginning can-ot be dated exactly. It grew gradually out of the technical practices of earlier times. It is till going on, for in some countries industrialization has barely begun, and even in the ost highly developed it is still making advances. But the first country to be profoundly ffected by industrialization was Great Britain, where its effects became manifest in the alf-century following 1780.

It seems likely, despite the emphasis placed on revolutionary upheavals by historians, hat people are habitually quite conservative. Working people do not put off their old way f life, move to strange and overcrowded towns, or enter the deadly rounds of mine and actory except under strong incentive. Well-to-do people, living in comfort on assured ncomes, do not readily risk their wealth in new and untried ventures. The shifting to mod-rn machine production requires in any country a certain mobility of people and of wealth. uch mobility may be produced by state pressure, as in the twentieth-century industrializa-ion of the Soviet Union or the People's Republic of China. In eighteenth-century England high degree of social mobility developed from a long historical process of social change.

The Agricultural Revolution in Britain

The English Revolution of 1688, confirming the ascendancy of Parliament over the king, neant in economic terms the ascendancy of the more well-to-do property-owning classes. Among these the landowners were by far the most important, though they counted the reat London merchants among their allies. For a century and a half, from 1688 to 1832, he British government was substantially in the hands of these landowners—the squirearchy" or "gentlemen of England." The result was a thorough transformation of arming, an Agricultural Revolution without which the Industrial Revolution could not ave occurred.

Agricultural experimentation.

Many landowners, seeking to increase their money incomes, began experimenting with improved methods of cultivation and stock raising. They made more use of fertilizers such as animal manure; they introduced new implements such as the drill seeder and horse-hoe; they brought in new crops, such as turnips, and a more scientific system of crop rotation; they attempted to breed larger sheep and fatter cattle. An improving landlord, to introduce such changes successfully, needed full control over his land. He saw only a barrier to progress in the old village system of open fields, common lands, and semicollective methods of cultivation. Improvement also required an investment of capital, which was impossible so long as the soil was tilled by numerous poor and custom-bound small farmers.

The old common rights of the villagers were part of the English common law. Only an act of Parliament could modify or extinguish them. It was the great landowners who controlled Parliament, which therefore passed hundreds of "enclosure acts," authorizing the enclosure, by fences, walls, or hedges, of the old common lands and unfenced open fields. Land thus came under a strict regime of private ownership and individual management. At the same time small owners sold out or were excluded in various ways, the more easily since the larger owners had so much local authority as justices of the peace. Ownership of land in England, more than anywhere else in central or western Europe, became concentrated in the hands of a relatively small class of wealthy landlords, who leased it out in large blocks to a relatively small class of substantial farmers. This development, though in progress throughout the eighteenth century, reached its height during the Napoleonic wars.

The enclosure acts.

One result was greatly to raise the productivity of land and of farm labor. Fatter cattle yielded more meat; more assiduous cultivation yielded more cereals. The food supply of England was increased, while a smaller percentage of the population was needed to produce it. Labor was thus released for other pursuits. The greater number of the English country people became wage earners, working for the farmers and landlords, or spinning or weaving in their cottages for merchants in the towns. English working men and women were therefore dependent on daily wages long before the coming of the factory and the machine. Working people became mobile; they would go where the jobs were, or where the wages were slightly higher. They also became available for new kinds of work because fewer of them were needed on the land to produce food. Such conditions hardly obtained except in Great Britain. On the Continent agricultural methods were less productive, and the rural workers were more established on the soil, whether by institutions of serfdom as in eastern Europe or by the possession of property or firm leaseholds as in France.