

The Making of the Modern World, Part II, 1851–1914

The period covered by the second part of *The Making of Modern World* witnessed the apex of European hegemony. The leading European nations—Britain, France, and Germany—had divided much of the world into colonies and spheres of influence; Russia had extended its territories to the Pacific Ocean; the United States began its empire across the Pacific; and even several less powerful nations—Spain, Belgium, the Netherlands, Denmark, and Italy—possessed colonies. Britain held the reins of authority over the world's financial system and, along with Germany and the United States, dominated industrial output. European languages—particularly English, Spanish, and French—were spoken around the world, and European culture set the standards others followed. This period also saw the remarkably rapid modernization of the only nation to truly challenge European hegemony, Japan, which went from an isolated feudal state to an expansive industrialized empire in sixty years.

These years of European triumph built upon substantial technological progress, once more transforming the world in ways no one could have predicted. The pace of change accelerated to the point that it appeared that a significant new invention or discovery occurred every year. Someone born in the 1850s lived in a very different world in the early twentieth century. Even a partial list of the major inventions gives a sense of the alterations in the lives of the average European or American. In 1864 Louis Pasteur determined that heating killed bacteria in a process named for him, pasteurization, transforming both the dairy and wine industries and saving thousands of lives every year. Alfred Nobel invented dynamite in 1867, allowing for the more rapid movement of earth in construction projects and, ultimately, for the more effective slaughter of people in wartime. The first typewriters appeared in 1870, accelerating the speed of communication and opening a major area of employment for women, who were seen as more agile on the new machines. Barbed wire was invented in 1873, allowing the fencing of vast tracks of land in any environment. Alexander Graham Bell demonstrated his new telephone at the Centennial Exhibition in Philadelphia in 1876, changing the way people at a distance communicated. These rapid changes are best exemplified by the research lab in Menlo Park, New Jersey, established by Thomas Edison in 1876. Gathering together a variety of brilliant engineers, scientists, and practical artisans, Edison generated an astounding array of technological improvements and inventions, starting with the phonograph in 1877 and the first commercially manufactured light bulbs a few years later. Edison's prime competitor, George Westinghouse, followed suit, producing the first railroad air brakes and promoting the use of alternating current for electrical supply. Other inventions proved less benign, such as Sir Hiram Maxim's 1884 machine gun, or Karl Benz's first automobiles two years later. In 1890 the Scot Robert Gair invented the pre-cut cardboard box, which proved a boon to shippers and cats everywhere.

Corporations proved adept at taking these new inventions and creating massive new areas of production. Industrialization took off in these years, marking the change to mass production. Henry Bessemer's converter of 1856 greatly reduced the time and expense of manufacturing steel, quickly leading to the expansion of steel production in Europe and the United States. Edison and Westinghouse created their own electrical companies, promoting the creation of electrical grids around the world and the widespread use of electricity and electric lighting in businesses and private homes. Entire new businesses appeared. For instance, Emile Berliner's United States Gramophone Company released the first commercial flat disc recordings in 1894; by 1910 tens of millions of records were being sold each year by companies around the Atlantic world. Henry Ford's

automobiles best exemplify the link between innovation, production, and mass consumption emerging in the early twentieth century. In the United States in 1895 there were 300 cars; in 1903, when Ford Motor Company began production, there were about 33,000 registered cars in the U.S.; by 1914 Ford was producing more than 200,000 cars a year and there were almost 2 million cars and trucks on the nation's roads.

During the period 1851–1914 science underwent two paradigm shifts, beginning with Charles Darwin's 1859 publication of *On the Origin of Species* and ending with Albert Einstein's publications on the theory of relativity. The first completely transformed the way in which even common people understood the history of life on Earth, while the latter proved more elusive to all but trained scientists, for whom the Newtonian mechanical universe ceased to exist. These scientific developments were matched by lifesaving advances in medicine. Documents addressing these and many other changes in the scientific, medical, and scholarly universe of the nineteenth and early twentieth centuries can be found in this and other Gale Primary Sources archives including *British Library Newspapers*, *American Fiction*, *Nineteenth Century Collections Online*, *Punch Historical Archive*, *Sabin Americana*, *The Making of Modern Law*, and the (London) *Times Digital Archive*.

Despite all the technological and intellectual changes, social and political structures remained relatively fixed. Nearly every European nation and Japan operated under some sort of monarchical system, from the constitutional monarchy of the United Kingdom to the absolute monarchy of Russia, while the United States maintained its white male democracy. Most of the major political events of this period grew out of military conflict, such as the fall of Napoleon III in France and the unifications of Germany and Italy. But this basic social and civic stability proved misleading and temporary. For those paying close attention, there were many harbingers of the future and numerous disruptive forces at work. The leading nations struggled to control their booming economies, battling over levels of internal economic regulation and tariff protection against foreign competition. Laissez-faire economic ideology reigned in Britain and the United States, though powerful businesses did not hesitate to call upon the nation's resources when it suited their purposes, from seizing public property through eminent domain to relying on military forces for the suppression of unions. Similarly, the governments of both nations imposed protective tariffs to support home industries and offered subsidies for economic expansion. Both countries found that the absence of regulation carried a heavy price, such as the tens of thousands of deaths each year in industrial accidents in the United States or the devastating results of the Irish potato famine. Both countries began imposing various forms of safety regulation at the start of the twentieth century, generally following the lead of Germany, which more closely regulated its economy and instituted social services and social security well before any other industrial nation. The development and implementation of these economic policies are covered in this collection, with documents drawn from both the public and private sectors.

The wars of the period pointed toward several unresolved international crises. The period began with the Crimean War, in which England and France sided with the Ottoman Empire to halt Russian expansion, resulting in a stalemate and the introduction of trench warfare. The American Civil War of 1861–65 amply demonstrated the horrendous killing power of mass-produced firearms, claiming some 750,000 lives by one modern estimate. The Franco-Prussian War of 1870–71 made evident the importance of modern organization and transport as the German armies systematically crushed the French. This war also showed the fragility of governments, as Napoleon III fell from power and the German states were absorbed into the empire created by Prussia, as well as indicating the unintended consequences of military action when Paris turned to the radical alternative of the

Commune and the French government called on German aid and weaponry to put down this threat to established order. The Spanish-American and Russo-Japanese wars of 1898 and 1904–05 left little doubt of the weakness of the old empires before the might of industrialized warfare, as Spain collapsed after just ten weeks of war with the United States, and Russia did not stand a chance against the better organized and armed Japanese. Two other conflicts foreshadowed the century ahead. As the government of the United States turned away from democracy toward empire, the people of its new colony of the Philippines felt betrayed, launching insurrections that lasted fourteen years and contained many aspects of the conflicts ahead, from guerrilla warfare to the massacre of civilians to counterinsurgency practices like waterboarding. The two Balkan Wars of 1912–13 succeeded in expelling the Ottoman Empire from all but its last foothold in Europe, while also fostering the rise of bitter ethnic animosities and territorial ambitions. The European nations established an alliance system intended to protect the participating nations from attack while almost guaranteeing a continent-wide conflict should war ensue.

Building on the first part of *The Making of Modern World*, which runs from 1450 to 1850, Part II covers the years 1851 to 1914 and is focused on economics. This part of the collection includes nearly five thousand titles totaling 1.2 million pages. These publications are drawn from holdings at the University of Kansas, Hiroshima University of Economics, the Seligman Library at Columbia University, and Goldsmiths' Library of Economic Literature at the University of London. This was an age obsessed with business. Its heroes were the titans of industry, its ideal great wealth, and its leading ideology one that championed the rich and mocked the poor. Yale professor William Graham Sumner formulated social Darwinism, a willful misapplication of natural selection to human society based on the simple assumption that wealth measured worth and that government should do nothing to interfere with its accumulation. In Sumner's evaluation, the poor deserved to suffer and charity interfered with the just actions of nature in removing the weak (Sumner, *What Social Classes Owe to Each Other* [1883]). The hugely popular English writer Samuel Smiles put forth a doctrine of self-help, insisting that each individual was responsible for himself and could do anything he wanted, while those who failed clearly deserved their fate (Smiles, *Self-Help; ou, Caractère* [1865], *Thrift* [1897 ed.]). Business promoted the vision that businessmen were the heroes of the age, funding laudatory works such as James Howard Bridge's *Inside History of the Carnegie Steel Company: A Romance of Millions* (1903).

Big business did not go unchallenged. Workers organized themselves into unions across the industrial world. In some nations, such as France and Germany, they became part of the system, gaining substantial electoral power and winning acceptance for collective bargaining (Daniel Halévy, *Essais sur le mouvement ouvrier en France* [1901]; Anton Menger, *Das Recht auf den vollen Arbeitsertrag in geschichtlicher Darstellung* [1886]). In these nations, the government often acted as a referee intent on preserving social stability by accepting the legitimate concerns of workers (*Untersuchungen über die Lage der Angestellten und Arbeiter in den Verkehrsgewerben* [1902]). However, in most other nations, the government took the side of management, using the law to prevent union organization and using the military to crush strikes (Terence Powderly, *Thirty Years of Labor* [1889]; Sidney and Beatrice Webb, *The History of Trade Unionism* [1894]). An interesting side effect of the different approaches to unions evident in this collection is the greater scholarly attention paid to the lives of workers in those countries that accepted the right of unionization (Paul Ballin, *Der Haushalt der Arbeitenden Klassen* [1883]). In those nations hostile to the rights of workers, such as Britain and the United States, leading intellectuals crafted an image of unions as dangerous conspiracies intent on destroying peace and prosperity (John Honeyman, *Trades-Unionism: The Blight on British Industries and Commerce* [1877]; Frank Julian Warne, *The Anthracite Coal Strike* [1901]).

Despite the disproportionate power of governments, workers continued to organize, finding allies in the middle class in the early twentieth century. Of particular note is the leading role of women workers, who perceived that they were denied rights not just in the workplace but also in the public sphere. The result was the first wave of feminism and a demand in every industrial nation for the right to vote (Clara Collet, *Educated Working Women* [1902]; *Suffrage Speeches from the Dock* [1912]). In the United States, an effective cohort of writers exposed the monopoly power of the largest corporations. Ida Tarbell's *The History of the Standard Oil Company* (1905) provoked the federal government to apply antitrust legislation for the first time, while Upton Sinclair's *The Jungle* (1906) shocked the public and President Theodore Roosevelt and played a direct role in the creation of the Food and Drug Administration.

None of these actions diminished the pervasive power of the largest corporations, however, and most of this collection concerns itself with business activities. Nearly every economic enterprise is covered in *The Making of the Modern World* at both the micro and macro level of analysis. Agricultural studies range from farming (James Caird, *Prairie Farming in America* [1859]; Pierre Kropotkin, *L'Agriculture* [1893]; Hermann Levy, *Entstehung und Rückgang des landwirtschaftlichen Großbetriebes in England* [1904]) to sheep raising (Thomas Southey, *The Rise, Progress and Present State of Colonial Sheep & Wools* [1851]; Herbert Gibson, *The History and Present State of the Sheep-Breeding Industry in the Argentine Republic* [1893]). Cotton is extensively covered (David Christy, *Cotton Is King* [1855]; Henry Dunlop, *The Cotton Trade: Its National Importance, Present Difficulties and Future Prospects* [1862]), as well as other clothing materials and manufacturing (*Die wirtschaftlichen Verhältnisse des Zollvereins* [1863]; Alexander Laing, *Lecture on the History of Linen and of Linen Manufacture in Newburgh* [1872]). Other books explore developments in the production of steel and iron (*The Iron and Steel Industries of Belgium and Germany* [1896]; Friedrich Müller, *Krupp's Steel Works* [1898]), coal (*Coal: Its Development and Destiny* [1857]; Richard Brown, *The Coal Fields and Coal Trade of the Island of Cape Breton* [1871]), and other forms of mining (Abram S. Hewitt, *A Century of Mining and Metallurgy in the United States* [1876]; Felix Abraham, *Methodische Wertbeurteilung der Witwatersrand Goldbergbau-Unternehmungen* [1901]). The evolving field of transportation is examined in books on railroads (Edward Churton, *The Railroad Book of England* [1851]; Eugene Smalley, *History of the Northern Pacific Railroad* [1883]) and shipbuilding (John McLeod Murphy, *American Ships and Ship-Builders* [1860]; Henry Fry, *The History of North Atlantic Steam Navigation* [1896]), as well as automobiles and rapid transit (Arthur Henry Beavan, *Tube, Train, Tram, and Car; or, Up-to-Date Locomotion* [1903]; Beckles Willson, *The Story of Rapid Transit* [1903]). Finally, the collection includes early books on the oil industry (Andrew Cone and Walter Johns, *Petrolia: A Brief History of the Pennsylvania Petroleum Region* [1870]; *Report of the Commissioner of Corporations on the Petroleum Industry* [1907]).

In addition to a wide range of government publications relevant to the economy, the collection includes numerous documents on the primary business concerns of the era. Included are multiple works on the debate over protective tariffs (Joseph Wharton, *National Self-Protection* [1875]; G. de Molinari, *Conversations sur le commerce des grains et la protection de l'agriculture* [1855]), government policies on trade and manufacturing (Johann E. Wappäus, *Gelegentliche Gedanken über nationale Handelspolitik* [1851]; James Moore, *The Industrial Policies of Great Britain and the United States* [1876]), and monetary policy (Samuel Dana Horton, *The Silver Pound and England's Monetary Policy since the Restoration* [1887]; William F. Knight and J. Found Tillman, *History of the Currency of the Country and the Loans of the United States* [1897]). Also included are books on expanding areas of the economy, such as insurance (Frederick Hendriks, *Contributions to the History of Insurance, and of the Theory of Life Contingencies* [1851]; Georg Zacher, *Guide to the Workmen's Insurance of the German Empire*

[1900]), stock markets (Edward P. Moxey, *Fluctuations of the New York Stock Market, 1871–1882* [1883]; Henry Clews, *Fifty Years in Wall Street* [1908]), and banking (Henry D. MacLeod, *The Theory and Practice of Banking* [1855]; John Crosby Brown, *A Hundred Years of Merchant Banking* [1909]). Covered too are economic innovations like income tax (Arthur M. Ellis, *A Guide to the Income Tax Acts* [2nd ed., 1886]; Edwin R. A. Seligman, *The Income Tax: A Study of the History, Theory, and Practice of Income Taxation at Home and Abroad* [1911]) and specific economic crises such as the Panics of 1857 and 1873 (David M. Evans, *The History of the Commercial Crisis, 1857–58* [1859]; *History of the Terrible Financial Panic of 1873* [1873]).

Beyond practical considerations, the collection contains many volumes in which contemporaries grappled with the larger workings of the economy. Economists confidently predicted that they could create a scientific method for examining the structure of economics at both the local and global levels. Toward that end, they paid attention to those who had previously addressed the mechanisms of trade and commerce such as the great French government minister and early advocate of economic liberalism Anne Robert Jacques Turgot (Alfred Neymarck, *Turgot et ses doctrines* [1885]) and the great promoter of liberalism and the new field of political economy John Stuart Mill (Mill, *Principles of Political Economy* [1848]; Alexander Bain, *John Stuart Mill: A Criticism* [1882]). Here too are works by and about the industrialist and early socialist Robert Dale Owen (Owen, *The New Existence of Man upon the Earth* [1854]; William Lucas Sargant, *Robert Dale Owen, and His Social Philosophy* [1860]); the conservative philosopher and founder of sociology Herbert Spencer (Spencer, *Social Statistics* [1851]; Henry George, *A Perplexed Philosopher* [1893]); and more radical economic theorists such as David Ricardo, Thomas Malthus, and Karl Marx (Abel Joire, *La population, richesse nationale, appréciation vraie des principes de Malthus* [1885]; James Bonar, ed., *Letters of David Ricardo to Thomas Robert Malthus* [1887]; J. Rosenberg, *Ricardo und Marx als Werttheoretiker* [n.d.]; E. Aster, *Marx und die Gegenwart* [1929]). Scholars in every country paid special attention to the formulator of the concept of capitalism, Adam Smith, and the impact of his ideas (Richard B. Haldane, *Life of Adam Smith* [1887]; Maurice Block, *Les progrès de la science économique depuis Adam Smith: Revision des doctrines économiques* [1890]; Karl Walcker, *Adam Smith, der Begründer der modernen Nationalökonomie: Sein Leben und Seine Schriften* [1890]).

The economists of the late nineteenth century may not have made a science of their academic pursuit, but they certainly succeeded in making it a profession. By the end of the century every major university had an economics department and scholars had established professional associations in several countries, starting with the Verein für Socialpolitik in Eisenach, Germany, in 1872, followed by the American Economic Association (AEA) in 1885 and the British Economic Association in 1890. In many ways, these first professional economists set the standards and areas of research followed by generations of succeeding scholars. Some produced studies of the economies of specific nations (L. De Colange, *The American Encyclopædia of Commerce, Manufactures, Commercial Law, and Finance* [1881]; Richard Hildebrand, *Recht und Sitte auf den verschiedenen wirtschaftlichen Kulturstufen* [1896]), branches of the economy (Thomas G. Shaw, *The Wine Trade, and Its History* [1851]; Lorenz von Stein, *Lehrbuch der Finanzwissenschaft* [1885]), and individual corporations and entrepreneurs, as mentioned above. Others produced comparative studies (Ami-Théodore et Jules Ponson, *Traité de l'exploitation des mines de houille; ou, Exposition comparative des méthodes employées en Belgique, en France, en Allemagne et en Angleterre* [2nd ed., 1868]; Lowthian Bell, *The Iron Trade of the United Kingdom Compared with That of the Other Chief Iron-Making Nations* [1886]) or general economic textbooks, such as Alfred Marshall (*Elements of Economics of Industry* [1892]) and Frank William Taussig (*Principles of Economics* [1911]). In short, this second part of *The Making of the Modern World* covers every significant aspect of the economic world from 1851 to 1914,

building on the massive compilation of documents in the first part covering the four centuries from 1450 to 1850. Taken together, these collections provide the broadest possible base for research into the origins of modern society.

Suggested Readings

A resurgence of international academic interest in the years prior to World War I has produced a wealth of scholarship devoted to this period. For general studies of the years covered by this collection, see:

Cahan, David, ed. *From Natural Philosophy to the Sciences: Writing the History of Nineteenth-Century Science*. Chicago: University of Chicago Press, 2003.

Edwards, Rebecca. *New Spirits: Americans in the Gilded Age, 1865–1905*. New York: Oxford University Press, 2015.

Fitzharris, Lindsey. *The Butchering Art: Joseph Lister's Quest to Transform the Grisly World of Victorian Medicine*. New York: Farrar, Straus and Giroux, 2017.

Hobsbawm, Eric. *The Age of Empire: 1875–1914*. New York: Vintage, 1989.

———. *The Age of Capital: 1848–1875*. New York: Vintage, 1996.

Wawro, Geoffrey. *Warfare and Society in Europe, 1792–1914*. London: Routledge, 1999.

Weightman, Gavin. *The Industrial Revolutionaries: The Making of the Modern World, 1776–1914*. New York: Grove Press, 2010.