CHAPTER ONE

The Classical Economic Stage

I. The Period of Classical Economics

In any detailed discussion of a particular body of ideas, it is perhaps helpful to begin by indicating to the reader the period during which those ideas were of importance.

There can be little doubt that the heyday of Classical economics was during the years 1800–1850. Delineation of the period during which Classical economics developed as a body of thought, came to be the ruling approach to economics, ultimately experienced a measure of stagnation and decay, and was finally supplanted by the young and vigorous development of neo-Classical economics in the "Marginal Revolution," is however a good deal less easy.

At one end it is usual to date the era of Classical economics as beginning in 1776, with the publication of Adam Smith's mighty *Wealth of Nations*. Such an approach has a strong prima facie appeal, but closer examination raises doubts about it. On the one hand Classical economics owed a great deal to David Hume in certain critical areas, especially that of monetary theory. The relevant part of Hume's *Essays* was published in 1752; and it is therefore doubtful if too much weight can be placed on the year 1776. Indeed the influence of Hume upon Smith cannot be ignored; they were close friends, and Hume was appointed by Smith to be his literary executor.[1] In addition the work of Adam Smith himself did not suddenly spring from nothing in 1776. He lectured in Edinburgh from 1748, moved to the University of Glasgow and was a professor there from 1751 to 1763. Of course he covered other subjects in addition to economics; but there is a set of notes on his lectures taken in 1762–63, and their editor, Edwin Cannan, pointed out many passages in them which are parallel to passages in the *Wealth of Nations*. Indeed it is apparent that quite a lot of the book was substantially in existence before Smith resigned his chair. Moreover there is evidence that his influence as a lecturer was considerable.

At all events we cannot date the Classical era as starting any later than 1776, and there are strong arguments for taking 1750 as its starting point. At the same time, however, it must be emphasized that during these early years the Classical approach certainly did not dominate economics. The

Physiocratic system of the French economists was still very much in its full strength. Indeed the beginning of the school is usually dated from the publication of the articles "Fermiers" and "Grains" by its leader Quesnay in 1756 and 1757. Mirabeau's *L'Ami des Hommes* appeared between 1756 and 60, and the famous *Tableau Economique* in 1758–59. The intellectual influence of the Physiocrats is, however, generally agreed to have been at its zenith in the 1760s, declining quite fast after 1770. Nevertheless the famous *Réflexions sur la Formation et la Distribution des Richesses* of Turgot did not appear until 1771, and this was far from being the last Physiocratic work.[2]

But Classical economics did become the ruling system, and for half a century up to 1850 it completely dominated economic thought. Although there can be little doubt that its influence declined from that date, delineation of the end of the era is, again, far from easy. It is tempting to select the year 1870, and there are certainly persuasive arguments for this. Jevons, who has a strong claim to be regarded as the progenitor of the neo-Classical economics which succeeded the Classical system, published his *Theory of Political Economy* in 1871. In a sense this was a watershed in the development of economics. In the ten years up to its publication Jevons had, largely unsuccessfully, attempted to interest people in his theory of value, first published as a paper read to the British Association in 1862.[3] At that time it had attracted no attention, and Jevons seems to have become discouraged. But by 1870 he was president of the Statistical Section of the British Association and, in the ten years which followed, the marginalist approach of neo-Classical economics was clearly making extremely rapid strides.

At the same time Classical economics, and all it involved, did not suddenly come to an end in 1870. What was probably the last significant work of Classical economics, J. E. Cairnes's *Some Leading Principles of Political Economy Newly Expounded,* did not appear until 1874, a year which also saw the fourth edition of Henry Fawcett's *Manual of Political Economy* (first published in 1863). Classical economics did not go without a fight. In the preface to the second edition of his *Character and Logical Method of Political Economy,* published in 1875, Cairnes attacked Jevons's whole employment of mathematics in economics; and as late as 1895, when the young Winston Churchill set out to teach himself some economics, it was to Fawcett's work that he turned.[4] But if it did not go without a fight it still went;[5] and 1870 will accordingly be treated as the end of the era, although not in any rigid sense—some significant works published after that date will be considered as falling within the subject matter of this book.

II. The Personnel of Classical Economics

Economists with no special interest in the history of economic thought tend, on hearing the word "Classical," to think rather vaguely (if they think of anything) of Smith and Ricardo—and to leave the matter at that. Yet, although these two writers were undoubtedly the twin pillars of Classical economics, they were but two out of a great number of writers; and it may be helpful to indicate the extent of the army of Classical economists.

Perhaps the best way to approach this exercise is to place the writers of the Classical school into three groups. Like all groups, these involve arbitrariness; and no doubt the inclusion of particular writers in one or another group will cause some readers to feel that less (or more) than justice is being done to the individual concerned. This may well be the case, but the device of grouping is intended as a purely clarificatory one, not as a system of ranking on merit.

Group I consists, conveniently, of just two men, Adam Smith (1723–90) and David Ricardo (1772–1823). In terms of the influence they exercised, these two writers were without doubt the two major figures of Classical economics. They were, however, not of the same kind. Smith, who as author of the *Wealth of Nations* has strong claims indeed to be regarded as the most influential economic author for 160 years after its publication, was a writer who covered virtually the whole field of economic inquiry. His great work, though at times straying into lengthy digressions, has a strong claim to be one of the most influential books ever written, extending its sway well beyond those who wrote on economics. It was often well argued and shrewd, yet it was capable of containing several different theories of the same economic phenomena without any real attempt to resolve the differences between them. But herein to some extent lay the secret of Smith's influence: the *Wealth of Nations* was thus able to suggest many extremely interesting lines of inquiry to different people.

One of these people was David Ricardo. He started reading Smith's great work while bored when visiting Bath for his wife's health; the outcome of his reading was to be highly significant. For Ricardo was of a very different cast of mind from Smith. He was the pure theorist par excellence. To the raw material of Smith's book he applied his analytical technique, and the result was the development of a method of reasoning, and an approach to economic problems, which are with us today. He seems to have followed his own instinctive method of procedure, although he had some limited study of natural science. It consisted of making a number of extremely restrictive assumptions, and proceeding to reason closely to a conclusion on the basis of these assumptions, often with no more than token reference to the real world. A perfectly legitimate device in itself, it has become known as "model building"; it is, however, a procedure much open to abuse when, from the results of the exercise, startling policy conclusions are drawn. Ricardo was to be guilty of this, and Schumpeter in his great *History of Economic Analysis* named this "the Ricardian Vice."[6] But for a while—though for nothing like as long as was the case with Smith—Ricardo's influence, both with respect to his theories *and* to the conclusions for policy drawn from them, was enormously strong. This was at least true of his influence with economic writers; the general public was less impressed, and at one stage it was suggested in the House of Commons, by Henry Brougham, that Ricardo must have "descended from some other planet,"[7] so oversimplified did his view of the working of the economic system appear.

Nevertheless his influence with economic writers was, for a while, very considerable. It must be stressed here that it is on the score of influence that Smith and Ricardo are included in Group I. No arbitrary judgment about the quality of what they wrote, as compared with the writers in other groups, is implied. Indeed many of the writers in these other groups had extremely important contributions to make, and offered insights which were later to prove very significant. But it is difficult to contest the view that the influence of Smith and Ricardo (though that of the latter was by far the less of the two) stands out clearly when Classical-economic literature is viewed as a whole.

Nevertheless many of the writers in Group II were extremely important. They include T. R. Malthus (1766–1834) who, building on Smith's foundations, managed to disagree with Ricardo on practically everything and who was, without a doubt, a major figure in Classical economics, even if attempts to make him into a forerunner of Keynes have been unsuccessful. It was Malthus who supplied the population theory which for long exercised great influence amongst the Classical economists, and which was incorporated by Ricardo into his basic model of economic progress.

Another significant figure included in Group II was a correspondent of both Malthus and Ricardo, the French economist J. B. Say (1767–1832). His own work, like that of Malthus, was much influenced by Smith; but it included the important (though subsequently much abused and misrepresented) Say's Law, and a subjective theory of value. Included in Group II also is James Mill (1773–1836), a disciple of the Utilitarian Jeremy Bentham, and a man who found the Ricardian style of reasoning congenial. He was undoubtedly Ricardo's closest follower. His son, also in Group II, was the famous John Stuart Mill (1806–73), the leading intellectual of his day but much less closely Ricardian than his father, and in many ways closer to Smith both in general approach and conclusions.

In addition to the two Mills there was John Ramsay McCulloch (1789–1864), Nassau Senior (1790–1864), Robert Torrens (1780–1864), Thomas Tooke (1774–1858), and, perhaps the last true representatives of Classical economics, J. E. Cairnes (1823–75) and Henry Fawcett (1833–84). McCulloch was considerably, if transitorily, influenced by Ricardo, although he had begun his career very much under the influence of Smith and Malthus.[8] He was the author of a highly successful textbook, but this was only part of an enormous output because he for long lived by his pen. He wrote extensively on economic policy, and was a pioneer in the collection and publication of economic data. Senior was the first to lead the revolt against Malthus's population theory. He was the architect of the New Poor Law of 1834, and a value theorist in a different mould from either Smith or Ricardo. Robert Torrens, a one-time Royal Marine commander with a stormy tenure in the military, pursued a career which was to prove almost equally stormy as economist and controversialist on such matters as money and banking and international trade theory and policy. In many ways his life was one continuous conflict, and his battles with successive governments for financial compensation for what he considered wrongs are a story in themselves. But Torrens, apart from Ricardo, was possibly the best pure theorist amongst the Classical economists: indeed in some respects he was arguably superior. Tooke is chiefly remembered for his monumental *History of Prices*. This, and an earlier work on *High and Low Prices,* must establish Tooke as the greatest collector of monetary data in the nineteenth century and as a formidable monetary controversialist. His insights in the latter respect were particularly important; but he made significant contributions in other fields, notably his clarification of the concept of profit in his *Considerations on the State of the Currency.* Cairnes and Fawcett are perhaps the least important figures in Group II, not so much because they contributed little that was new—although this was arguably the case—but because, judged by the criteria of influence, their importance, coming as they did at the end of an era, was necessarily limited. In many ways it was upon them that the marginal revolution fell. Fawcett has long been regarded as a regurgitator of J. S. Mill. This is perhaps a little unfair, in that he was alive to some of the differences between experience and the expected theoretical conclusions; and in any case there can be little doubt that, by virtue of his position as professor at Cambridge, he was in a position to exercise influence. Cairnes, as a professor at University College, London, was also in such a position, and his work had perhaps more to offer than that of Fawcett. In his work on method, and subsequently in his *Leading Principles,* he raised a number of questions about the central doctrines of Classical economics which, if he had pushed on to find answers to them, might have prolonged the vitality of the system.

Yet it is difficult to escape the feeling that Fawcett and Cairnes, included in Group II here because of an influence stemming partly from their academic positions, were analytically inferior to many, if not most, of the writers in Group III. The common characteristic of the latter is that they were men of considerable intellectual ability, sometimes highly influential over a narrow field of thought and policy, but men who did not attempt to exercise a broad general influence over large areas of economics and did not, with one or two exceptions, attempt comprehensive treatises, unlike virtually every writer in Group II except Tooke.

The common characteristic of the writers in Group III is that their contributions were highly specialized. They were confined to a considerable extent (though not entirely) to monetary economics (including foreign exchanges) and to value theory. Very many writers contributed to the public debates on these subjects, as well as to such popular matters of controversy as the Corn Laws, protection in general, colonies, and the Poor Laws. Any selection of the specialist writers becomes, then, highly arbitrary, and no doubt the selection included here will displease some readers. But it must be recognized that, on the one hand, no picture of Classical economics can be complete which omits entirely the specialist writers; and, on the other, no complete coverage of such writers is possible in anything less than encyclopedic dimensions. In defense of the particular selection offered here it should be said, firstly, that most of them contributed several publications of interest on a particular subject—they were not "one-shot" economists; and, secondly, that what they did have to say was, almost without exception, of considerable analytical interest.

The monetary writers form the largest group. They include Henry Drummond (1786–1860), Thomas Joplin (c. 1790–1847), George Warde Norman (1793–1882), Samuel Jones Loyd, later Lord Overstone (1796–1883), Henry Thornton (1760–1815), William Blake (c. 1774–1852), Francis Horner (1778–1817), John Wheatley (1772–1830), William Newmarch (1820–82), and Richard Page (1773–1841). Drummond and Joplin, together with Page and McCulloch and James Pennington (1777–1862), can claim to be the originators of the principle of "metallic fluctuation," which was to prove so important in nineteenth-century monetary controversy. G. W. Norman and Overstone (Loyd), particularly the latter, provided the basic theoretical framework for the Bank Act of 1844 (though drawing on Ricardo's exposition), both before its introduction and during its operation, when attacks against it required frequently to be repulsed. Norman, in addition, wrote on taxation and on international trade theory.

Thornton has a strong claim to be the greatest monetary theorist of the nineteenth century, indeed one of the greatest of all time. One of the major figures in the Bullionist controversy (in the period of Bank of England note inconvertibility during the French wars), he expounded a form of bullionism which was far removed from the rigid simplicity of the Ricardian version of the analysis. His form incorporated many of the subtleties of much later monetary theory. The same may be said to some extent of William Blake, whose work on exchanges was certainly important. Thornton, Francis Horner, and William Huskisson were the joint authors of the Bullion Report of 1810, one of the most amazing analytical documents ever to emerge from a parliamentary select committee. John Wheatley was another contributor to the Bullion controversy, and one who drew particular attention to the role of country-bank issues in the money supply, a point neglected by theorists like Ricardo and one which had to be rediscovered by McCulloch, Overstone, and, above all, by Joplin. William Newmarch was important, not only as Tooke's coauthor (indeed probably the principal author) in the writing of the last two volumes of the *History of Prices,* but also in his own right as an investigator into the monetary significance of bills of exchange, and, with Tooke, as one of the leading opponents of the Currency School and the Bank Act of 1844.

Also included amongst the monetary writers in Group III, for the purposes of this study, is the great David Hume (1711–76). Hume is of course one of the great figures in any history of ideas, and his significance extends far outside the field of economics. But his two essays "Of Money" and "Of the Balance of Trade" form nothing less than the foundation of Classical monetary economics.

The remaining writers in Group III were principally (though by no means exclusively) of significance through their writings on value theory. They were Thomas De Quincey (1785–1859)—chiefly famous to the general public as the opium eater, but important here as Ricardo's only other close disciple apart from James Mill—Samuel Bailey (1791–1870), author of a brilliant, if negative, survey of value theory, the Oxford mathematician W. F. Lloyd (1795–1852), who anticipated the Marginal Revolution in value theory by about four decades, and Mountifort Longfield (1802–84). The last named, a writer with a combination of penetration and compactness which was at times almost in the same class as David Hume, wrote not only on value theory but on transmission of international remittances, wages, and other matters. Another writer who contributed to the Classical literature was the eccentric John Rae (1796–1872), who moved from Scotland to Canada, thence to California and Hawaii, and whose important contributions to the theory of capital, and the analysis of innovation, earned him the respect of J. S. Mill.

Sir Edward West (1782–1828), inter alia one of the formulators of the "Ricardian" rent theory, also comes into this group. There was, in addition, George Poulett Scrope (1797–1876), one of only two writers in

Group III to attempt a comprehensive treatise (in his *Principles of Political Economy* of 1833). He wrote on value and distribution, monetary economics and economic fluctuations, population, and the Poor Law. He was strongly opposed to much of Classical economics, yet his methods and conclusions were essentially Classical. Although many of his charges were simply based on failure to understand the full subtleties of his opponents' position, no discussion of Classical economics which ignored him could be regarded as complete. The other writer in this Group who attempted a comprehensive treatment of the subject was Samuel Read, who, in 1829, published his *Political Economy, An Enquiry into the Natural Grounds of Right to Vendible Property or Wealth*. He also wrote on money and the bank-restriction laws, as well as on taxation. He was a close follower of Adam Smith's *Wealth of Nations*. Finally there were James Maitland (1759–1839), eighth Earl of Lauderdale, chiefly famous for his writings on the national debt, and John Barton (1789–1852), who managed to change Ricardo's mind on the effects of machinery, and influenced McCulloch on the Poor Law.[9]

These then were the most important of the men who together constituted the Classical economists. Obviously the sort of grouping employed here is arbitrary, both in its inclusions and in its exclusions. But it should at least give the reader who wants to find out who the Classical economists were some guidance as to where to look, after an initial stop at Smith and Ricardo.

The Classical economists are often considered, and indeed referred to, as the "English" Classical economists. This is something of a misnomer. In so far as they have one common fount, it is the Scot Adam Smith. The Scottish tradition of economic and social inquiry continued well on into the nineteenth century, mixing fact and theory and attempting to test the one against the other. Several English writers followed the same path, to some extent, notably Tooke and Newmarch. But, in so far as there was a more directly native English tradition, it was essentially that of Ricardo, followed by De Quincey, the Irishman Torrens, and the Scot James Mill. The latter's son, John Stuart Mill, really straddled these two main parts of the Classical development. Classical economics was essentially a development of intellectual thinking throughout the whole British Isles. (Thus, although Torrens was close to Ricardo on a number of theoretical issues, he retained a number of distinctively Irish characteristics, including a marked concern with the need for emancipation of Catholics. He wrote novels depicting their condition; for those who cannot stomach the originals there are delightful summaries by Lord Robbins.)[10] It also extended its influence into France (where Say was an important exponent) and even Germany. Indeed in time Classical economics became a body of thought which was, for practical purposes, the common possession of the economically educated, both in the British Isles and elsewhere, for three-quarters of a century and more.

III. The Backgrounds of the Classical Economists

The student of economics is accustomed to regard it as an academic subject, and to accept that its practitioners will be academics. This is a perfectly reasonable assumption in our own time, and indeed it has been essentially reasonable since the early twentieth century and probably since the 1890s. It was a characteristic of neo-Classical economics that its practitioners, from the 1870s onwards, were largely academic, both by employment and (to some extent at least) by cast of mind.

But all this was not true of the Classical economists. One of the most important distinguishing characteristics of the Classical economists is that they formed, educationally and professionally, a remarkably good cross-section of the educated classes of their age.

This characteristic is strongly borne out by the contrast between the two towering figures of Classical economics, Smith and Ricardo. Smith was an academic by profession, and received university education in both Glasgow and Oxford. He was professor of logic (and later of moral philosophy) at Glasgow between 1751 and 1764. Although he lived later on a ducal pension (supplemented still later by a Customs salary) he was essentially an academic. Ricardo, by contrast, was a stockbroker who retired early. He was to a considerable extent self-educated, both in the natural sciences, in which he was interested before taking up economics, and in the latter subject itself.

We find similar contrasts when we look at the other Classical economists. On the one hand there are those with a university education and background. Malthus was educated at Cambridge, and was both academic—as professor of history and political economy at the East India College at Haileybury—and cleric. Cairnes was educated at Dublin University, and was at various times a professor at Dublin, Galway, and University College, London. Fawcett, Cambridge-educated, was a professor there for twenty-one years. Senior, an Oxford Fellow, was Drummond Professor there from 1825 to 1830 and again from 1847 to 1852. Henry Drummond himself was educated at Oxford, as were Scrope, De Quincey, West, Lauderdale, and Wheatley. Overstone was educated at Cambridge. Hume was twice an unsuccessful candidate for professorial chairs in Scotland, and was keeper of the Advocates' Library in Edinburgh. Longfield, educated at Dublin University, was professor there, first of political economy and then of law. McCulloch, educated, like James Mill (and Lauderdale), at Edinburgh University, was an unsuccessful candidate for a chair there in 1825, and was professor at London University between 1828 and 1837. Say was a public lecturer in Paris in 1815, and was subsequently appointed to chairs at the Conservatoire des Arts et Métiers (1819) and the Collège de France (1830).

On the other hand, many of the Classical economists had neither university education nor employment. James Mill, though he had university education, and was inter alia an educational theorist and one of the founders of London University, never had university employment. But many had not even university education. Even his son J. S. Mill, one of the leading figures of his age, was educated by his father.[11] Thomas Tooke, who started work at fifteen, was largely self-educated, as was his collaborator William Newmarch (who rose from the position of bank clerk to be a force in the City of London) and his adversary Robert Torrens, who, as mentioned, attained the rank of major and finally colonel in the Royal Marines. So was Thomas Joplin, while George Warde Norman spent a good deal of his life trying to repair the educational deficiencies of Eton. Samuel Bailey seems also to have fallen into the self-educated category.

Of course all these figures were to a considerable extent—usually entirely—self-educated in the subject of economics, even where they had formal university education. For although Adam Smith's teaching in Glasgow was followed by that of Dugald Stewart in Edinburgh, the first chair of economics outside Scotland—indeed the first chair anywhere in the British Isles formally concerned with economics as distinct from moral philosophy[12]—was not established until 1825, when the Drummond Chair at Oxford was founded. The pioneering efforts of McCulloch as a public lecturer and private tutor should not be disregarded;[13] and amongst his pupils was Overstone. But, by and large, these men were self-educated in the subject which they helped to advance.

Two other educational characteristics are perhaps worthy of mention. On the one hand there were those (admittedly not very many) with a pronounced interest in natural science. They include in particular Scrope, Ricardo, Overstone, and Norman. The last two had a particular interest in geology, while Scrope was a leading geologist and secretary of the Geological Society, which awarded him its Wollaston Medal in 1867. But, except in Scrope's case, the scientific interest lacked the backing of formal education in the subject.

Formal education, especially at the university level, tended to be in classics, philosophy, mathematics, or law for most of those under consideration here. It is the last named which indicates a second educational characteristic of the Classical economists that is worthy of mention, for a remarkable number of them had at least legal training. Senior was a barrister of Lincoln's Inn, and a Master in Chancery from 1836 to 1855. Cairnes was an Irish barrister, and Fawcett studied law as a student of Lincoln's Inn after leaving Cambridge. Francis Horner was called to the Scottish Bar in 1800, and to the English Bar in 1807. Hume studied law and, as already noted, became librarian of an important law library. Longfield was not only professor of law at Dublin between 1834 and 1884, but also a judge of the Landed Estates court between 1858 and 1867. West was recorder of Bombay and became, in 1823, chief justice. Wheatley was a lawyer, called to the Bar in 1797, though he seems to have practiced little. Lauderdale, too, was trained as a lawyer.

The legal training provided both a common element in the educational background of some of the Classical economists and also a common professional interest. The professions of the group taken as a whole were highly varied, however. Nevertheless various members of the groups are found to have had some occupational interest in common. Some, as already noted, became academics, though they did not usually spend their working lives as such. Many relied on their pens to a greater or lesser extent. Thus James Mill, J. S. Mill, Torrens, Horner, Page, De Quincey, and, above all perhaps in this sphere, McCulloch, were to some extent journalists in that they gained a part, in some cases a significant part, of their income from working for periodical publications. In addition, Torrens was a newspaper proprietor, and the Mills were instrumental in setting up the *Westminster Review*, while McCulloch edited the *Scotsman* in the years 1817–21.[14]

Another common thread was provided by government employment, whether full-time or occasional. Thus both Mills were also effectively (as employees of the East India Company) civil servants. Smith was in his later years a customs officer. McCulloch was a full civil servant for the last twenty-six years of his life in his capacity as comptroller of the Stationery Office.[15] Senior did work for government amongst other ways in his preparation of the enormously influential Poor Law Commission Report of 1834. Torrens was a member of the South Australia Commission. Fawcett became paymaster-general under Gladstone. George Warde Norman was an exchequer bill commissioner. Say was a member of the tribunate under Napoleon, though he was later dismissed. David Hume was a British diplomat in Paris during 1765. Longfield was appointed an Irish privy councillor in 1867.

A number of the writers considered here were also members of Parliament. Ricardo was member for the Irish seat of Portarlington between 1819 and 1823, John Stuart Mill was MP for Westminster from 1865 to 1868, Torrens was MP for Ashburton from 1831 to 1835, and Fawcett became MP for Brighton. Drummond was an MP for many years, as were Henry Thornton and Scrope. Overstone and Francis Horner were also MPs, while Samuel Bailey was an unsuccessful parliamentary candidate and Lauderdale was a member from 1780 to 1789.

A number of these writers, apart from Ricardo, had financial careers, especially in banking. Overstone was an immensely wealthy and influential banker; George Warde Norman was a timber merchant and, more importantly, a director of the Bank of England for more than fifty years.[16] Joplin founded the National and Provincial Bank in 1833. William Newmarch rose to be manager of the bank of Glyn, Mills, & Co., while Thomas Tooke was a merchant, a partner in the firm of Astell, Tooke, & Thornton, chairman of the St. Catherine's Dock Company, and governor of the Royal Exchange Assurance Corporation between 1840 and 1852. Say was employed in business after his disgrace by Napoleon until the Restoration in 1815. Samuel Bailey worked for his father, a Sheffield master cutler, for a while, and was later chairman of the Sheffield Banking Company, which he helped to found.

The Classical economists, then, formed a very diverse group of men both in respect of their educational backgrounds and their professions. Yet, partly because many of them filled several different roles, there were important elements in all this which would have helped to bring them together, given a common interest in economics. It is therefore of some interest to ask whether they in any sense constituted a "scientific community."

IV. A Scientific Community?

The question of the extent to which the Classical economists constituted a scientific community is interesting on two counts. Firstly, the extent to which a group of thinkers forms such a community will have considerable influence on the way that the ideas that they hold are refined and developed to meet the test of criticism and on the degree to which anything like a consensus emerges. Secondly, those who are interested in the structure of "scientific revolutions" regard a community as a prerequisite for a revolution. This second aspect will not be developed here, although references are given at the end of the chapter so that the interested reader may pursue the matter. But the first aspect is of considerable general interest.

It has already been stressed that the Classical economists formed something of a cross-section of society. It is then interesting to find that they still managed to form what was, in the circumstances, a surprisingly close-knit group. The links which bound them together were of two main kinds, institutional and periodical.

The institutional links were basically four; the Political Economy Club, the (Royal) Statistical Society, the British Association, and the Royal Society. Of these the Political Economy Club was by far the most important. The vast majority of those whom we have included in our three groups were members, and a number were indeed founding members of the club. The latter included Ricardo, Malthus, James Mill, Torrens, Tooke, and Norman. J. S. Mill, McCulloch, Senior, Cairnes, Fawcett, Newmarch, Overstone, and Blake were also members. J. B. Say was elected an honorary member in 1822, and visited the club in 1828; and although it could not contain Henry Thornton, who died before its foundation, it did include his close associate Zachary Macaulay, father of T. B. Macaulay.

The club was founded in London in 1821 at a dinner attended by some of the founding members and seems to have taken its origin from the luminous and magnetic personality of Ricardo, and his desire to talk with other economists. But it should be emphasized that the club was not guilty of being some kind of society for the propagation of Ricardo's views or those of anyone else. It has been accused both of this and of being a means of disseminating the views of a small number of Utilitarians. Examination of both the membership and the questions discussed, and also of the records of the discussions kept by J. L. Mallet, shows this view to be wholly false. The enormous strength and vitality of the club, which would certainly have withered if it had been merely a propaganda institution, is itself a testimony to this. The most that can be said is that the membership accepted, as a general basis, the kind of economics to be found in the *Wealth of Nations*—and this is hardly enough on its own to establish any significant degree of unanimity, as the discussions bear witness. The significance of the club was that it was truly a debating forum, and, as such, it provided a vital hub for a scientific community.

The membership was far wider than that merely of the Classical economists. Apart from the latter, there were many who were on the fringe of Classical economics, although not included in any of the three groups here. Looking at those elected up to 1840 we find such names as Walter Coulson, Robert Mushet, Sir Henry Parnell, James Pennington, John Horsley Palmer, and Perronet Thompson. There were also very many who were important in government, politics, or business. They include G. G. de Larpent, J.G.S. Lefevre, John Abel Smith, Henry Warburton, Lord Althorp, William Whitmore, W. B. Baring, Poulett Thomson, Wilmot Horton, Lord Monteagle, Charles Hay Cameron, J. D. Hume, George Grote, James Morrison, Edwin Chadwick, Charles Buller, and Sir William Clay. Significant elections beyond that date include Robert Lowe, Sir G. C. Lewis, Rowland Hill, Stafford Northcote, G. J. Goschen, W. E. Gladstone, and W. E. Forster.

The procedure of the club was to hold a dinner on the first Monday of every month between December and June. (July was substituted for January from 1832.) By prior arrangement one member would speak to a particular question, and the discussion of the question would then go on for several hours. The questions themselves covered an enormous range. In only the first two years they included such theoretical and practical questions as the duty on corn, gluts, the effect of machinery, tax theory, Poor Laws, the colonial system, the demand for labor, profits and the rate of interest, the national debt, tithes, monetary theory, trade policy, value, and the improvements in political economy since the *Wealth of Nations*.

The Royal Statistical Society was founded, as the Statistical Society of London, in February 1834. The founders included such men as Charles Babbage, Richard Jones, Malthus, and William Whitmore. It, too, helped to provide an institutional means of welding the Classical economists into a scientific community. Malthus was the only original member from amongst our three groups, but later members included Overstone, Norman, Tooke, Newmarch, Torrens, Scrope, McCulloch, and Senior. It also included men not in our three groups, though they wrote on economics, including Babbage, J. W. Gilbart, Richard Jones, Frederick Hendriks, Thorold Rogers, W. L. Sargant, Leone Levi, Herman Merivale, and G. R. Porter, who, with McCulloch, must rank as the chief economic statistician of his age—even Tooke and Newmarch, incomparable though they were in their particular field, did not cover such a wide area. The Statistical Society was not as important as the Political Economy Club in linking the economists: for one thing, it was not founded until 1834. But it nonetheless reinforced the effects of the club and some of the economists—including Overstone, who was president from 1851 to 1853—were active in supporting its meetings. But the biggest guns do not seem to have involved themselves greatly in the society: it was mainly dominated by men like G. R. Porter, and the "fringe" economic writers listed above. Newmarch, however, came in time to dominate the society—he presented a great many papers, was its secretary and editor of its journal, and its president from 1869 to 1871. Tooke, too, was prominent in the society, and on his death it endowed a chair of economics at King's College, London, and a Tooke Prize. But the fact that most of the big names were little involved was important; apart from anything else it meant that the Journal of the society, which could have become a professional journal for the economists, never took on this role.

The society had grown out of the Statistical Section of the British Association, itself dating only from 1833. The annual meetings of the association provided the opportunity for a further link between the economists. For a long time, however, it mainly involved men like G. R. Porter, together with some writers on economics outside our groups, such as J. W.

Gilbart, as well as W. N. Hancock of Dublin. Gradually a few of the more important names appeared; Overstone took the chair in 1852 (when Gilbart, Hancock, and the historical economist Cliffe Leslie were also present). In 1853 Tooke was a vice president and, in 1854, president, while Newmarch was one of the secretaries of the section. He began increasingly to contribute papers to this section, and to assume great importance in it. By 1857 Cairnes had joined Newmarch as a secretary, and Hancock and Leslie were both on the section's committee, together with another historical economist, J. K. Ingram. Cairnes, too, became a frequent contributor of papers, as did Leslie and Fawcett, the latter becoming a member of the committee and a vice president. Strangely enough, the central figures of Classical economics participated only in old age. Senior was president in 1860 (succeeded the following year by Newmarch), and in 1863 and 1864 Torrens was a member of the committee and contributed papers.

The last institution linking the Classical economists was the Royal Society. Dating from the 1650s, it was designedly a society of natural scientists, but it contained for many years a number of those eminent in other fields—indeed they were for long in the majority. The natural scientists resented this and in the 1820s and 1830s they made attempts to alter it, although it was not until 1847 that they achieved any real success. Thus it was that it numbered amongst its members Malthus, Tooke, Newmarch (incidentally elected long after the reform of 1847), William Blake, and Scrope (elected for his natural science work). The society also included a number of fringe economists, notably Porter, Gilbart, and Babbage.

Probably equal in importance to the institutional links between the Classical economists were those afforded by periodical literature. In our own day scientific and other kinds of academic communities are linked to a considerable extent, and their subject matter develops and is refined, through the publication of articles in professional academic journals. But during the era of Classical economics such publications simply did not exist. Fortunately, however, there was something else which filled the role admirably. This was the circulation of the various reviews.

Foremost amongst them, in terms of foundation, influence, and content was undoubtedly the *Edinburgh Review*. It was founded in 1802 by Francis Horner and two other once-celebrated men, Sidney Smith and Francis Jeffrey. Several of the early contributors had studied under Dugald Stewart at Edinburgh, and the *Review* had a decidedly economic bent from its earliest days. Its circulation approached fourteen thousand at times, and there may have been up to five readers for every copy. It was widely read by the middle and upper classes, and it provided an important outlet for economic articles, as well as summaries for its readers of the current state of economic debate on an enormously wide range of issues. The contributors included McCulloch (who had a major share of economic articles for nearly twenty years), Horner, Malthus, the Mills, Torrens, and Senior. F. W. Fetter, the leading authority on these reviews, pointed out that fifteen members of the Political Economy Club wrote for the *Edinburgh Review,* compared with six for the *Westminster Review,* four for the *Quarterly Review,* and none for *Blackwood's Edinburgh Magazine.* By 1850 the *Edinburgh Review* had published about 250 economic articles with known authors. Of these seventy-eight were by McCulloch, fifty-four by other members of the club, and some of the remainder by friends of members. By contrast the *Quarterly Review* carried two hundred such articles up to 1850—but only seven were by club members.

The *Quarterly Review* was started by the Tories in 1809, in order to oppose the Whig *Edinburgh Review.* To do this it found itself printing many economic articles. Apart from writers basically opposed to Classical economics, its authors included Huskisson, Malthus, Scrope, Senior, and the latter's friend Archbishop Whately.

Blackwood's Edinburgh Magazine was founded in 1817 by the Edinburgh ultra-Tories. It was strenuously contemptuous of economics and published articles full of vulgar ridicule and coarse abuse directed at economists, at McCulloch above all. Very different from this, and far more important, was the *Westminster Review,* founded in 1824 by Jeremy Bentham. It was designed to promote the views of the Utilitarians and the philosophical radicals; James Mill and (later) J. S. Mill were much involved in it. But it also carried articles by Scrope and by fringe economists such as W. R. Greg, Gilbart, and Thompson. Unlike the *Quarterly* and *Blackwood's,* it worked within the general framework of Classical economics, and it was an important source of economic literature. Its circulation was small: compared with 14,000 for the *Edinburgh,* it sold 2,000 to 3,000, while the *Quarterly* sold 10,000, and even *Blackwood's* managed 6,000. But its economic output was of excellent quality—significantly better than anything the *Quarterly* or *Blackwood's* had to offer—and it was well read amongst the Classical economists.

Of course articles in the Reviews were not the limit of the Classical economists' contributions to periodicals. There were also newspapers. J. S. Mill was involved with one called the *Examiner,* and Torrens was a major proprietor of the *Globe and Traveller,* for which he also wrote. Between 1817 and 1827, J. R. McCulloch contributed a significant number of economic articles, often on theoretical subjects, to the *Scotsman,* the front page of which he frequently occupied. Many of the original formulations of his ideas appeared in the paper. He later contributed to the *Courier* and the *Times;*[17] and Overstone published some important material in that paper under the pen name "Mercator" between 1855 and 1857.[18] James Wilson, one of the arch-opponents of the Bank Act of

1844, founded (in 1843) and wrote for the *Economist*. In 1837, Thomas Joplin had founded a short-lived publication by that name. This was not his first foray into journalism; as early as 1823 he had contributed articles to the *Courier* newspaper, and he provided others for it during the financial crisis of 1825.[19]

There were also other reviews, including the *Foreign Quarterly Review,* which carried seven articles by McCulloch between 1829 and 1833, and the short-lived *London Review,* for which Senior wrote. There were also the *Foreign and Colonial Quarterly Review* and the *North British Review,* for which an economic writer a little outside the Classical fold, Thomas Chalmers, wrote articles between 1844 and 1847.

All these articles were anonymous. But at the time they were written their authorship was fairly well known to their readers; or, if not exactly known, the author of an article would have been easily restricted to a short list of perhaps three or four people. Sometimes an identification might be erroneous, but on the whole intellectual identities were transparent enough that the Reviews could add to the sense of community. Indeed it should be clear from the material of this section that the Classical economists *did,* to some extent, constitute a scientific community, a fact which is further borne out by their published correspondence, although there is not space to detail that here.

V. The Economic History of the Classical Age

What the Classical economists wrote and believed, the body of ideas they developed, was influenced to a considerable extent by the discussion of those ideas within their community. But it can hardly have been independent of the momentous events of the economic history of their age. What follows is a highly compressed attempt to indicate the most important threads of this history.

It is evident that the era which produced the Classical economic literature was one of momentous change. Economic historians have attempted to quantify the extent of these changes, although it should be stressed that such data, both in the form given here and in later revisions, are subject to huge margins of error.[20] Nonetheless, treating the numbers as indicative, and coupling them with the reactions of contemporaries, of which the writings of the Classical economists are an important part, it is clear that those individuals wrote and worked through an explosion of economic growth for which there was no historical precedent, and which they were faced with explaining and analyzing.

Population and income began to grow together in the mid-eighteenth century. The population expansion began in the 1740s and reached a growth rate of 3.5 percent per decade by 1751–61. By 1810–20 the staggering figure was 16.9 percent. The population of England and Wales, which had been less than six million in 1700, had reached 22.7 million by 1871. At the beginning of the eighteenth century national income was probably less than £50 million. By 1871 it had risen nearly four times in the course of seventy years to £916.6 million. Despite the population increase, GNP per head increased at greater than 1 percent per annum in the years 1801–71. Yet it is doubtful (though not impossible) that there was any significant rise in real wages up to about 1820. From that date, however, wages did improve significantly, especially from 1840 onwards.

The period under consideration also saw a revolution in policy towards, and in the volume of, trade. Policy largely followed a trend of liberalization (with the exception of the war years) after the publication of the *Wealth of Nations*. Pitt attempted reform of the customs between 1784 and 1786, and Huskisson and Robinson pursued trade liberalization in the 1820s. The most important reforms, however, were those of Peel who, starting in 1842, began an important review of British tariffs, culminating in the budget of 1845 (which saw duties on over four hundred items removed) and the repeal of the Corn Laws in 1846. The volume of trade rose enormously; U.K. imports which were valued at £39.6 million in 1796 had risen to £103.0 million by 1853, with domestic exports increasing from £30.1 million to £71.4 million. This involved a great broadening of the range of commodities traded, as the British economy expanded and diversified, and as it became sensitive to economic changes throughout the whole trading world.

Closely bound up with this was a fundamental change in the balance of the British economy. Agriculture, which accounted for 40 to 45 percent of national income in the years 1700–76, had declined to only 26 percent by 1821, and to 14 percent by 1871. Between 1801 and 1871 its share of the labor force fell from 36 percent to 15 percent. It became increasingly unrealistic to reason in terms of a basically agricultural economy.

The role of the agricultural innovations in all this cannot have been insignificant—either for agriculture, or for the history of ideas. The agricultural labor force was about 1.7 million in 1801 and 1.8 million in 1871; during the same period agricultural output rose from £75.5 million to £130.4 million.

The rise of the manufacturing sector to predominance was impressive; probably *the* most impressive single factor to contemporary economic writers. Accounting for 24 percent (£30.3 million) of GNP in 1770 it accounted for 38 percent (£348.9 million) by 1871. The great staple industries grew up in this period; output of the cotton industry rose from £0.6 million in 1760 to £104.9 million in 1871. Parallel with all this, and inseparable from it, were changes in transport. There were only seventy miles of railway open as late as the years 1826–30; by 1864 there were nearly eleven thousand miles. The special position of the railways forced the state to intervene in their running; and this was but one aspect of the great growth of effective state power in this era, even though much state regulation (largely dating from the Tudor and Stuart eras, and more honored in the breach than the observance) was swept away. This is reflected in the rise in state spending from £14 million in 1776 to nearly £70 million in 1870.

Other significant economic changes took place during the period, notably in the monetary sphere and, though there is not space to detail them here, they undoubtedly exercised a strong influence on the thinking of contemporaries. The interested reader may pursue some of the references at the end of this chapter. But having surveyed the Classical economic stage, it is now time to examine the roots from which Classical economics sprang.

Further Reading

Suggestions for further reading for this chapter can only skim the available literature. What follows is an attempt to indicate some further references bearing on the material in the text. The two great source books of economics are fortunately available in excellent editions. For Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations,* we have the great edition by Edwin Cannan (London, 1904). This is still widely available, though now superseded as the definitive source by the bicentennial Glasgow edition edited by R. H. Campbell, A. S. Skinner, and W. B. Todd (Oxford, 1976), which is available in a paperback edition published by Liberty Classics (Indianapolis, 1981); references to the Cannan edition have been retained in this study, however. Ricardo's *Principles Of Political Economy and Taxation* is vol. I of the magnificent *Works and Correspondence of David Ricardo,* ed. P. Sraffa with M. H. Dobb (Cambridge, 1951–55), now supplemented by P. L. Porta, ed., *David Ricardo: Notes on Malthus's Measure of Value* (Cambridge, 1992).

The most important works of the Group II writers are as follows: T. R. Malthus, *Principles of Political Economy, Considered with a View to their Practical Application* (London, 1820 and 1836)—there is now a variorum edition by John Pullen (Cambridge, 1989), and see his "The Editor of the Second Edition of T. R. Malthus' *Principles of Political Economy,*" *History of Political Economy* 10 (1978): 286–97; James Mill, *Elements of Political Economy* (London, 1821), repr. in D. Winch, ed., *James Mill, Selected Economic Writings* (Edinburgh, 1966); J. S. Mill, *Principles of Political Economy,* ed. W. J. Ashley (London, 1909)—this edition is still very useful, and is widely available: it is the one referred to in this study, though there is now a definitive edition from Toronto University Press edited by J. M. Robson (Toronto, 1965); J. R. McCulloch, *The Principles of Political Economy with a Sketch of the Rise and Progress of the Science* (4th ed. Edinburgh and London, 1849); R. Torrens, *The Principles and Practical Operation of Sir Robert Peel's Act of 1844, Explained and Defended* (3d ed. London, 1858); J. B. Say, *Traité d'Economie Politique* (Paris, 1803, 4th ed. trans. C. R. Prinsep; repr. New York, 1964) (there is also a useful compilation of Say's other writings in translation in R. R. Palmer, ed., *J. B. Say. An Economist in Troubled Times* [Princeton, 1997]); N. W. Senior, *Selected Writings on Economics* (New York, 1966); T. Tooke (with W. Newmarch), *A History of Prices and of the State of the Circulation from 1793* (London, 1838–57); H. Fawcett, *Manual of Political Economy* (London, 1863); J. E. Cairnes, *Leading Principles of Political Economy Newly Expounded* (London, 1874).

It is perhaps unnecessary in a work of this kind to detail the leading works of the Group III writers, though mention may be made of Hume's *Essays and Treatises on Several Subjects,* of which there have been many editions since their first appearance in 1752 and of which there is a useful selection in David Hume, *Writings on Economics,* ed. E. Rotwein, (Madison, 1955) and J. R. McCulloch's *Select Collection of . . . Tracts . . . on Paper Currency* (London, 1857; repr. New York, 1966), which includes the most important works of Thornton and Blake as well as the Bullion Report. General secondary references abound: the two best are probably J. A. Schumpeter's mighty *History of Economic Analysis* (London, 1954), and M. Blaug, *Economic Theory in Retrospect* (London, 1961). See also A. L. Macfie, *The Individual in Society* (London, 1967), for a discussion of the Scottish tradition. Those interested in the delineation of the era of Classical economics should consult the introduction to Adam Smith's *Lectures on Police, Justice, Revenue and Arms,* ed. E. Cannan (London, 1896), and his *Lectures on Rhetoric and Belles Lettres,* ed. J. M. Lothian (Edinburgh, 1963), as well as R. L. Meek, *The Economics of Physiocracy* (London, 1962). For the other end of the chronology see R.D.C. Black's introduction to Jevons's *Theory of Political Economy* (London, 1971). An excellent general survey is provided within a brief compass by D. Winch, *The Emergence of Economics as a Science* (London, 1971).

There are many articles and a number of books about individual economists. See in particular Lord Robbins, *Robert Torrens and the Evolution of Classical Economics* (London, 1958), which includes a superb bibliographical summary of each of Torrens's works; M.E.A. Bowley, *Nassau Senior and Classical Economics* (London, 1937); S. Leon Levy, *Nassau W. Senior 1790–1864* (New York, 1970); D. P. O'Brien, *J. R. McCulloch, A Study in Classical Economics* (London, 1970; repr. Aldershot, 1992, and London 2003); P. Schwartz, *The New Political Economy of J. S. Mill* (London, 1972); D. P. O'Brien, *Thomas Joplin and Classical Macroeconomics* (Aldershot, 1993); A. Arnon, *Thomas Tooke: Pioneer of Monetary Theory* (Ann Arbor, 1991). See also O. St. Clair, *A Key to Ricardo* (London, 1957) (the best guide to what Ricardo actually said) and M. Blaug, *Ricardian Economics* (New Haven, 1958) as well as the same author's incisive "What Ricardo Said and What Ricardo Meant," 3–10, in G. Caravale, ed., *The Legacy of Ricardo* (Oxford, 1985). For a guide to what economists have claimed that Ricardo meant, see T. Peach, *Interpreting Ricardo* (Cambridge, 1993).

There are a number of biographies of economists. Interesting material will be found in John Rae, *Life of Adam Smith,* repr. with a fascinating introduction by Jacob Viner (New York, 1965) and R. H. Campbell and A. S. Skinner, *Adam Smith* (London, 1982). A later biography is I. S. Ross, *The Life of Adam Smith* (Oxford, 1995). There is an interesting sidelight on a facet of Smith's career which economists have tended to ignore in G. M. Anderson, W. F. Shughart, and R. D. Tollison, "Adam Smith in the Customhouse," *Journal of Political Economy* 93 (1985): 740–59. Ricardo's *Works,* ed. P. Sraffa, vol. X, contains biographical material—see also D. Weatherall, *David Ricardo: A Biography* (The Hague, 1976). Early biographies include A. Bain, *James Mill: A Biography* (London, 1882), and J. Bonar, *Malthus and his Work* (London, 1885), 2d ed. 1924. Malthus has been the subject of much recent work. There is a full-length modern biography, P. James, *Population Malthus* (London, 1979). Patricia James earlier edited Malthus's *Travel Diaries* (Cambridge, 1966). John Pullen's work on Malthus has been a prodigious scholarly effort. He has unearthed material on Malthus's clerical career ("Some New Information on the Rev. T. R. Malthus," *History of Political Economy* 19 [1987]: 127–40), his family background ("Correspondence between Malthus and his Parents," *History of Political Economy* 18 [1986]: 133–54—this a remarkable discovery amongst the Bonar papers), and even his teaching. Anyone who thinks that the questions on economics faced by Malthus's pupils would be trivial by today's standards should see "Notes from Malthus: the Inverarity Manuscript," *History of Political Economy* 13 (1981): 794–811. (More about Malthus's questions can be found in H. Hashimoto, "Malthus and the *Wealth of Nations:* his examination papers and Inverarity manuscript," *Kyoto Sangyo University Economic and Business Review* 15 [1988]: 19–95, especially 25–28.) There is also a large scholarly study of Malthus's work by S. Hollander, *The Economics of Thomas Robert Malthus,* 2 vols. (Toronto, 1997), the publication of which was the occasion for a "minisymposium" on Malthus in *History of Political Economy* 30 (1998): 289–363, with contributions by N. De Marchi, A. Waterman, S. Hollander, J. Pullen, and D. Winch, and with comprehensive bibliographical addenda. There are also two important autobiographies: that of J. S. Mill, which is available in many editions, and that of De Quincey in his *Confessions of an English Opium Eater.* De Quincey in fact left a lot of biographical material—see vols. I–III of his *Works,* ed. D. Masson (London, 1896). There is also a biography of J. S. Mill by M. St. J. Packe, *The Life of John Stuart Mill* (London, 1954). This, with other biographical material relating to Mill, is discussed in an elegant review by Lord Robbins, "Packe on Mill," *Economica* n.s. 24 (1957): 250–59. A significant literature has developed concerning John Rae, whose work Mill noticed. See in particular R. W. James, *John Rae, Political Economist* (Toronto, 1965); D. Mair, "John Rae: Ugly Duckling or Black Swan," *Scottish Journal of Political Economy* 37 (1990): 275–87; S. Ahmad, "On John Rae's Controversial Contributions to Economics," *Journal of the History of Economic Thought* 18 (1996): 207–28; O. F. Hamouda, C. Lee, and D. Mair, *The Economics of John Rae* (London, 1998); and two articles relating to recently discovered correspondence of John Rae, by D. Mair and R. W. James, in *Journal of the History of Economic Thought* 23 (2001): 339–42, 343–52. For Charles Babbage, see G. J. Stigler "Charles Babbage (1791 + 200 = 1991)," *Journal of Economic Literature* 29 (1991): 1149–52; and R. M. Romano "The Economic Ideas of Charles Babbage," *History of Political Economy* 14 (1982): 385–405. The same author has also provided an essay on W. F. Lloyd—"William Forster Lloyd—A Non-Ricardian?" *History of Political Economy* 9 (1977): 412–41. Information on John Barton can be found in R. P. Sturges, "The Career of John Barton, Economist and Statistician," *History of Political Economy* 14 (1982): 366–84; and on Lord Lauderdale in H. F. Thomson, "Lord Lauderdale's Doctrine and Policy on the Parliamentary Stage," *Nebraska Journal of Economics and Business* 13 (1974): 92–108.

Amongst the articles about particular economists, see in particular: F. W. Fetter, "Robert Torrens: Colonel of Marines and Political Economist," *Economica,* n.s. 29 (1962): 152–65; and the same author's "The Life and Writings of John Wheatley," *Journal of Political Economy* 50 (1942): 357–76; a pioneering discussion of Joplin in T. Wilson *Fluctuations in Income and Employment* (London, 1948); R. Opie, "A Neglected British Economist: George Poulett Scrope," *Quarterly Journal of Economics* 44 (1930): 101–37. Interesting light is shed upon Scrope, and the matter of contemporary scientific interests, in S. Rashid, "Political Economy and Geology in the Early Nineteenth Century: Similarities and Contrasts," *History of Political Economy* 13 (1981): 726–44.

As mentioned in the chapter, both James Mill and John Stuart Mill worked for the East India Company. Fascinating insights into the younger Mill's work can be found in A. L. Harris, "John Stuart Mill: Servant of the East India Company," *Canadian Journal of Economics and Political Science* 30 (1964): 185–202.

Editions of the writings of economists other than Smith and Ricardo are becoming increasingly available: see, for instance, D. Winch, *James Mill: Selected Economic Writings* (Edinburgh, 1966) (this contains much valuable biographical material and commentary); F. W. Fetter, *The Economic Writings of Francis Horner* (London, 1957); F. A. Hayek's edition of Henry Thornton's *Enquiry into the Nature and Effects of the Paper Credit of Great Britain* (1802; London, 1939); R.D.C. Black, *Economic Writings of Mountifort Longfield* (New York, 1971); D. P. O'Brien, *J. R. McCulloch: Treatise on Taxation* (Edinburgh, 1974). There is also a magnificent modern edition of the works of J. S. Mill published by Toronto University Press: and the introductions to his *Essays* (by Lord Robbins) and the *Principles* (by V. W. Bladen) are especially valuable. There are now also fairly complete editions of the works of McCulloch (ed. D. P. O'Brien, Bristol, 1995) and Torrens (ed. G. de Vivo, Bristol, 2000).

The contribution of authors other than Smith and Ricardo to the development of classical economics has been the subject of important scholarly work in the almost three decades since the first edition of this book. The work on Longfield, James Mill, Senior, Bailey, Torrens, and Say is discussed in D. P. O'Brien, "Classical Reassessments," in W. O. Thweatt, ed., *Classical Political Economy* (Boston, 1988). Also covered in this volume is work on the bigger names—not merely Smith and Ricardo (and inevitably, again, the interpretation of Ricardo), but also Malthus and J. S. Mill. Thweatt himself has been refreshingly willing to question the various competing orthodoxies in the interpretation of classical writings. See in particular his "James Mill and the Early Development of Comparative Advantage," *History of Political Economy* 8 (1976): 207–34; "Mr Mill and the Classics," *Journal of Economics* 3 (1977): 119–22; "Early Formulations of Say's Law," *Quarterly Review of Economics and Business* 19 (1979): 79–96; and "Adam Smith, James Mill and Ricardian Economics," *Midsouth Journal of Economics* 3 (1979): 7–19.

The reader interested in pursuing the idea of the Classical economists as a community should start with the following references: F. W. Fetter's "The Authorship of Economic Articles in the *Edinburgh Review* 1802–47," *Journal of Political Economy* 61 (1953): 232–59; "The Economic Articles in the *Quarterly Review* and their Authors, 1809–52," *Journal of Political Economy* 66 (1958): 47–64, 154–70; "Economic Articles in *Blackwood's,*" *Scottish Journal of Political Economy* 7 (1960): 85–107, 213–31; "The Economic Articles in the *Westminster Review* and their Authors, 1824–51," *Journal of Political Economy* 70 (1962): 570–96; "Economic Controversy in the British Reviews, 1802–1850," *Economica* n.s. 32 (1965): 424–37. See also S. Rashid, "David Robinson and the Tory Macroeconomics of *Blackwood's Edinburgh Magazine*," *History of Political Economy* 10 (1978): 258–70. The great general source for authorship of review articles is now W. Houghton et al., *The Wellesley Index to Victorian Periodicals 1824–1900, 5* vols. (Toronto, 1966–89). Volumes VI–IX of Ricardo's *Works* contain his correspondence with his economist contemporaries; vol. II of the same edition contains his *Notes on Malthus*. See also *The Correspondence of Lord Overstone,* ed. D. P. O'Brien (Cambridge, 1971), which also contains letters throwing light on Torrens's battles with authority. J. S. Mill's correspondence is also published in the Toronto edition of Mill: see *The Earlier Letters of John Stuart Mill 1812–1848,* ed. F. E. Mineka, 2 vols. (Toronto, 1963). The Political Economy Club's *Centenary Volume* (London, 1921) contains the necessary source material on the club; on the other institutions, see *Annals of the Royal Statistical Society* (London, 1934); O.J.R. Howarth, *The British Association . . . A Retrospect* (London, 1922); and *The Record of the Royal Society of London* (London, 1940).

Those wishing to get a broader view of the literature than that presented here should see the catalogues of the Kress (Boston, 1940–67) and Goldsmith libraries (London, 1970) and R.D.C. Black, *A Catalogue of Pamphlets on Economic Subjects . . . 1750 . . . 1900 in Irish Libraries* (Belfast, 1969). There is also a valuable work by one of the Classical economists, J. R. McCulloch's *The Literature of Political Economy* (London, 1845). McCulloch was a noted bibliophile, and printed two editions of an annotated catalogue of his library. A reprint of the second edition (1862) is in the edition of McCulloch's works referred to above, vol. VI. See also the introduction by D. P. O'Brien to vol. I. of McCulloch's *Select Tracts,* reprinted as *Classical Writings on Economics* (London, 1995).

Four references on the whole question of scientific revolutions will suffice here. The origin of the approach is to be found in T. S. Kuhn, *The Structure of Scientific Revolutions* (Chicago, 1962). For subsequent developments, see A. W. Coats, "Is there a 'Structure of Scientific Revolutions' in Economics," *Kyklos* 22 (1969): 289–96; M. Bronfenbrenner, "The 'Structure of Revolutions' in Economic Thought," *History of Political Economy* 3 (1971): 136–51; and D. P. O'Brien, "Theories of the History of Science: a Test Case" (1983), reprinted in *Methodology, Money and the Firm,* vol. I. 33–68 (Aldershot, 1994).

Finally there is the economic history of the age, of which only the briefest sketch was offered above. The most useful references here are W.H.B. Court, *A Concise Economic History of Britain from 1750 to Re-*

cent Times (Cambridge, 1954); P. Deane, *The First Industrial Revolution* (Cambridge, 1965); P. Deane and W. A. Cole, *British Economic Growth 1688–1959* (Cambridge, 1964); B. R. Mitchell with P. Deane, *Abstract of British Historical Statistics* (Cambridge, 1962). The figures given in the text above are drawn from these sources. There is also the deeply impressive study by A. Gayer, W. Rostow, and A. Schwartz, *Growth and Fluctuation of the British Economy 1790–1850* (Oxford, 1953), and the great work by Sir John Clapham, *An Economic History of Modern Britain,* 3 vols. (Cambridge, 1926–38). Useful background can also be found in two smaller works, G. F. Langer, *The Coming of Age of Political Economy, 1815–25* (Westport, CT, 1987), and B. Hilton, *Corn, Cash, Commerce: The Economic Policies of the Tory Governments 1815–1830* (Oxford, 1977). Much of the established work on eighteenth- and nineteenth-century economic history has been subject to criticism, with re-estimation of the data, since the first edition of this book. A valuable compendium of such revisions is R. Floud and D. McCloskey, eds., *The Economic History of Britain since 1700,* vol. I, 2d ed. (Cambridge, 1994). Many of the revisions themselves are open to serious criticism, however. For an incisive and detailed critique, see in particular J. Hoppit, "Counting the Industrial Revolution," *Economic History Review* 2d ser. 43 (1990): 173–93.