



# History of **Economic** Analysis

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*with a new introduction by* **Mark Perlman**

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## CHAPTER 4

### The Econometricians and Turgot<sup>1</sup>

THE INDIVIDUALS and groups to be discussed in this chapter were also Consultant Administrators, though not of the academic type, and some of them qualify in addition as philosophers of natural law. Nevertheless, it was not only to relieve a chapter already overloaded with names that they have been reserved for separate treatment. Except for the great figure of Turgot, which is to come in at the end of the chapter, they have something in common that makes it desirable to marshal them into a connected array—the spirit of numerical analysis. They were Econometricians. In fact their works illustrate to perfection what Econometrics is and what Econometricians are trying to do.<sup>2</sup>

#### 1. POLITICAL ARITHMETICK

Repeatedly we have had occasion to observe that, with economists of all types but especially with the Consultant Administrators, factual investigation was the primary task that absorbed most of the available manpower and progressed more satisfactorily than did such ‘theory’ as there was. This was so from the first, as such representative examples as Botero and Ortiz suffice to show. However, in the seventeenth and eighteenth centuries, a type of teaching developed, especially at the German universities, that specialized in purely descriptive presentation of the facts relevant to public administration. A German professor, Hermann Conring (1606–81), is usually credited with having been the first to give lectures of this kind. Another, Gottfried Achenwall (1719–72), who did the same, introduced the term Statistics. These ‘statistics’ did not present figures primarily but rather non-numerical facts, and therefore had nothing to do, in the hands of those professors, with what we now call statistical method. But the purpose of this information was much the same as that which our figures, treated by somewhat more refined methods, are calculated to serve. The definition of statistics adopted as late as 1838 by the Royal Statistical Society—to give it its present title—still turned upon ‘illustration of the conditions and prospects of society,’ and thus covered the work of Conring and Achenwall quite

<sup>1</sup> [J.A.S. had originally entitled this chapter ‘The Econometricians’; on the typescript he added ‘and Turgot?’ in pencil.]

<sup>2</sup> The word Econometrics is, I think, Professor Frisch’s, and it has been coined by analogy with Biometrics, statistical biology. A distinctive name, embodying a program, is perfectly justified in this case (see the first number of *Econometrica*, January 1933, on the foundation and aims of the Econometric Society). And so we may leave it at that, though the term is exposed to objection on philological grounds: it ought to be either Ecometrics or Economometrics.

well.<sup>1</sup> But—alas for the academic profession!—the really interesting development did not start from it.

The decisive impulse came from a small English group led and inspired by Sir William Petty.<sup>2</sup> The nature both of what he called Political Arithmetick and of his personal contribution to it has been formulated with unsurpassable fairness by one of his ablest followers, Davenant<sup>3</sup> (*Of the Use of Political Arithmetick, Works*, I, p. 128): ‘By

<sup>1</sup> Since statistics came to mean sometimes various bodies of facts, and sometimes various types of methods, there is nothing surprising in the number of different definitions that have been proposed by different workers from their different standpoints. The German statistician Engel, whom we shall meet again on a more important occasion, once put that number as high as 180. See G.Loyo, *Evolución de la definición de estadística*, Publicación 44 of the Instituto Panamericano de Geografía e Historia (1939).

<sup>2</sup> Petty (1623–87) was a self-made man—physician, surgeon, mathematician, theoretical engineer, member of parliament, public servant, and businessman—one of those vital people who make a success of almost everything they touch, even of their failures. Though he paid the price of his versatility, his is one of the great names in the history of economics. But as regards his posthumous fame, luck lent its aid to merit. Marx’s decree to the effect that Petty was the founder of economics added socialist applause to bourgeois eulogies initiated by Roscher in 1857. Thus, economists whom no other topic could unite, among them many who were complete strangers to the real meaning of Petty’s message, have ever since joined forces in extolling him, Germans even more than Englishmen. Perusal of Lord E.Fitzmaurice’s *Life* (1895) is recommended. Of Petty’s writings the following are of prime importance for us: *A Treatise of Taxes and Contributions* (1662); *Verbum Sapienti* (written 1665, publ. 1691); *Political Anatomy of Ireland* (1672); *Political Arithmetick* (written 1676, publ. 1690); *Quantulumcunque concerning Money* (written 1682); *Essays on Political Arithmetick* (written 1671–87); all republished in *The Economic Writings of Sir William Petty*, by C.H. Hull (1899). This edition also contains the celebrated *Natural and Political Observations... upon the Bills of Mortality*, originally published (1662) by John Graunt. A long and inconclusive controversy has been waged on the question of Petty’s share in this performance, which may be looked upon as the fountainhead of modern demography, though Graunt should not, on this account, be called the ‘founder’ of statistics. Lord E.Fitzmaurice’s *Life* has been supplemented by the Marquis of Lansdowne’s editions of the *Petty Papers* (1927) and of the *Petty-Southwell Correspondence, 1676–87* (1928).

<sup>3</sup> The name of Charles Davenant (1656–1714) moves slowly into the front-rank position that belongs to him but it has not quite arrived there as yet. He was a public servant but also a politician, thrice elected M.P., and, as such, a violent enemy of the Whigs rather than a violent Tory: perhaps it is this and the effects of this on some of his writings that interfered with his recognition. There also was something else. Those historians who ask ‘What does a man stand for?’ did not quite know what to make of him. On the one hand, the ‘liberals’ among them were delighted when they hit upon such phrases as that trade is by nature free, that it finds its own channels, that laws which limit or regulate it are seldom advantageous to the public (though they may serve individual interests), and that money was a mere counter. On the other hand, they were grieved to find in him so much about regulative policy that they had to class him as an adherent of a (nonexisting) ‘mercantilist theory.’ Some accounted for what they took to be a self-contradictory attitude by the hypothesis that in those earlier writings in which the ‘liberal’ passages occur, Davenant spoke his mind freely whereas, later on, in office especially, he turned opportunist. We shall see later (below, ch. 7) that there is another explanation, viz., that he was a good economist. His *Works* have been (incompletely) edited by Sir Charles Whitworth (1771). Additional ones have since emerged, the latest find being published under the title *Two Manuscripts by Charles Davenant, 1942 (A Reprint of Economic Tracts*, ed. by Professor G.Heberton Evans, Jr., with an instructive introduction by

Professor Usher). Also see Y. Ballière, *L'Oeuvre économique de Charles Davenant* (1913). His contributions to economic analysis amount to an impressive total and may be classified as follows: (1) there is, implicit but clear, behind all his writings the awareness of the logic of the relations by which things economic hang together, a merit that is somewhat, but not necessarily much, reduced by the priority of Child, Barbon, and also others; (2) he substantially improved, though only by what may be called a case method, his epoch's acquirements in the theories of money and of international trade and finance; (3) he was one of the first authorities of his time on public finance—taxes, debts, and so on; (4) he was one of the few who understood, and co-operated in, the work of Political Arithmetick. Individual points will be noticed in subsequent chapters.

Political Arithmetick we mean the art of reasoning by figures upon things relating to government... The art itself is undoubtedly very ancient... [But Petty] first gave it that name and brought it into rules and methods.' It will be seen that the 'methods'—which of course he did not invent either but, as it were, helped into consciousness—do not consist in replacing reasoning by the assembling of facts. Petty was no victim of the slogan: let facts speak for themselves. Petty was first and last a theorist. But he was one of those theorists for whom science is indeed measurement; who forge analytic tools that will work with numerical facts and heartily despise any others; whose generalizations are the joint products of figures and reasoning that are never allowed to part company. The relation of this procedure to that of the physical sciences—and to Newtonian principles, in particular—is so obvious as to make it necessary to emphasize that Petty displayed no propensity to borrow from them or even to strengthen his case by doubtful analogies with them. He simply proposed 'instead of using only comparative and superlative words and intellectual arguments... to express [himself] in terms of number, weight and measure.' No less obvious is it that he was acutely aware of the polemical aspects of his methodological creed. He was quite ready to fight for it and to start what would have been the first controversy on 'method.' But nobody attacked. A few followed. Many admired. And the vast majority very quickly forgot. That is to say, economists did not forget the name; they even remembered individual views of Petty's on various practical issues and some of his theories—precisely those that were couched in mere slogans. It was the inspiring message, the suggestive program, which wilted in the wooden hands of the Scottish professor and was practically lost to most economists for 250 years: A. Smith took the safe side that was so congenial to him when he declared (*Wealth*, Book IV, ch. 5) that he placed not much faith in Political Arithmetick.

Not lost, however, was the impulse given to vital statistics and thus indirectly to statistics in general. In this, the chief or even sole merit is now usually attributed to Graunt (see footnote 2 above).

In the next chapter we shall touch upon the controversies of that period on the subject of the growth (or decline!) of population which until the census of 1801 was, in England at least, a matter of conjecture. This, however, was only one of the problems that Graunt's or Petty's achievement put into a more promising shape by means of the 'bills of mortality' drawn from parish registers. Computations of the chance of survival with application to insurance, of the influence of inoculation on longevity, of the relation of the sexes at birth, and of the average duration of marriage in relation to the ages of husband and wife are examples taken at random from a large field of research that was to



be taken into cultivation within the subsequent hundred years on the lines chalked out by Graunt's book. Nor is his merit adequately characterized by calling him the 'Columbus of the mortality bills.' It is perhaps still more to his credit that he displayed a sense of the methodological nature of those mass phenomena that may be described by 'laws' although the individual elements of them are fortuitous. It must suffice to mention the main stepping stones of further progress. The first to inquire with exactness into the problem of chances of survival was E. Halley (*An Estimate of the Degrees of the Mortality of Mankind*, 1693). J.P. Süßmilch (*Die göttliche Ordnung in den Veränderungen des menschlichen Geschlechts...*, 1740) may be said to have put vital statistics definitely on its feet by developing and systematizing the work of his English predecessors. The theory of probability, the basis of statistical method, was developed by Jacques Bernoulli (1654–1705; *Ars conjectandi*, 1713) and still further by his nephews Nicholas (1687–1759) and Daniel Bernoulli (1700–1782), who also worked out further applications. In view of the close alliance between modern economics and not only the material but also the methods of statistics, it is highly regrettable that we cannot follow this line of advance any further. The reader may, however, glean most of what is wanting here from a study of H.L. Westergaard's excellent *Contributions to the History of Statistics* (1932).

More important for economics proper was another performance that illustrates the curious obtuseness (just lamented) of economists: Gregory King's (1648–1712) law of demand for wheat.<sup>4</sup> It refers to deviations from an assumed normal and states that if the harvest falls short of this normal by 1, 2, 3, 4, or 5-tenths, the price will rise above what we should call its trend value—which King, however, assumed to be constant, at least, for many years together—by 3, 8, 16, 28, or 45-tenths. From this an equation, explicitly giving the law of demand implied, can easily be derived.<sup>5</sup> The remarkable thing is that King, though he did not attempt any further refinements, evidently understood the problem perfectly; that he worked with deviations from a

<sup>4</sup> *Natural and Political Observations and Conclusions upon the State and Condition of England in 1696* (sec. VII). This work, a pioneer of quantitative economics and one of the best examples of what Political Arithmetick stood for, was not published by the author. Davenant incorporated some parts of it in his *Essay upon the Probable Methods of Making a People Gainers in the Ballance of Trade* (1699), but the whole was not presented to the public before 1804, when George Chalmers published it with a life of the author. The first five sections deal with the number of inhabitants, ingeniously inferred from hearth-tax returns, age distribution, marital status, mortality in cities and the country, and cognate matters. Sections VIII–XIII are devoted to matters of public finance. From our standpoint, sections VI and VII are the most important. Besides the famous demand schedule, they contain other noteworthy contributions, such as his estimates of the income and expenditure of the nation in 1688, of meat consumption, and of the quantity of gold and silver in England and other countries.

<sup>5</sup> It has been calculated by G.U. Yule ('Crop Production and Prices: A Note on Gregory King's Law,' *Journal of the Royal Statistical Society*, 1915, p. 296 et seq.) at  $y = -2.33x + 0.05x^2 - 0.00167x^3$ .

normal is a particularly interesting touch. Still more remarkable is it that, in spite of the general notoriety that 'King's law' was to gain, it did not occur to economists either to improve upon it—though all that was required was to proceed further on a line unmistakably chalked out—or to apply the same method to other commodities until the work of H.L. Moore, 1914 (see below, Part IV, chs. 5 and 7) released the avalanche of statistical demand curves of our own time—a lag of over 200 years. Do not let us forget, however, the econometric work done elsewhere, for example, in Italy, by such men as Verri or Carli.

To return to Petty. All or most of his writings were prompted by the practical problems of his time and country—problems of taxation, of money, of the policy of international trade particularly with a view to getting the better of the Dutch, and so on. The superior quality of his mind shows in all his comments and suggestions, but there is nothing very striking or very original or very distinctive about them: they represented the views that were then current, or rapidly becoming current, among the best English economists. Nor is there anything distinctive in the fact itself that Petty no doubt reasoned from a more or less clearly perceived set of principles or theoretical schema; several of his contemporaries did that, and his schema was no more articulate than were theirs. There was something, however, that was specifically his own and in which his mental energy and theoretical talent asserted themselves conspicuously: as already observed, he hammered out concepts from, and in connection with, statistical investigations, and in doing so he got further at some points than did any of his contemporaries. His concept of velocity of money is—rightly—the most famous example and will be mentioned again in Chapter 6. Another example is his work on national income: he did not bother about its definition, but he recognized its analytic importance and he tried to figure it out. Modern income analysis may be said, in this sense, to start with him, though it seems on the whole better to trace it to Quesnay (see below, sec. 3). A third example is this: everyone knows the phrase that has been repeated *ad nauseam*, 'labor is the father... of wealth, as lands are the mother.' This means that he put on their feet the two 'original factors of production' of later theorists. Illogically dropping the mother, he declared elsewhere that capital (the 'wealth, stock, or provision of the nation') is the product of past labor—which brings to mind James Mill's blundering reformulation of Ricardo.<sup>6</sup> But it cannot be repeated too often that in themselves, and without the developments that make them valuable, such suggestions amount to very little. What does amount to something is his research on a 'natural par' between land and labor, that is to say, his attempt, foreshadowing the much more thorough-going one of Cantillon, to relate the values of land and labor by equating a piece of land that will produce a 'day's food of an adult man' (with certain corrections) to the day's labor of such a man. If technological and all other conditions of production and consumption remained severely the same, this procedure might give us the economic philosopher's stone—the unit of measurement by which to reduce the available quantities of the two 'original factors,' land and labor, to a homogeneous quantity of 'productive power' that could be expressed by one figure, and the unit of which might serve as a land-labor standard of value. As it is, this interesting venture, like all similar ones, proved to be a blind alley.

<sup>6</sup> See below, Part III, ch. 6.

Of course, this was no explanation of the phenomenon of value, still less a labor theory of value—if anything, it was a land theory of value. On division of labor, however, we find all the essentials of what Adam Smith was to say about it, including its dependence upon the size of markets. Pricing is dealt with sketchily. Contrary to Marxist opinion, there is no theory of wages (unless we choose to dignify by this name the proposition that laborers ‘should’ never get more than a subsistence minimum because if they got double as much they would reduce their work to half!) and no exploitation theory of surplus value or of rent (unless we choose to dignify by these names the trivial propositions that there would be no surplus if the laborers claimed the whole product, that the rent of land is what is left after costs of production have been defrayed, and that it increases as, with increasing demand, corn must be brought from greater distances).<sup>7</sup> There is, however, at least in a particular instance that is not too well framed, a perception of the tendency toward equalization of returns as between industries.<sup>8</sup> Although it lacks the reference to margins, which would be necessary to make the theorem tenable, we have here in fact a contribution toward the explanation of the business mechanism.

Finally, Petty’s theory of interest, so far as he can be said to have had one, points back to the scholastics. Direct influence is not quite impossible, since he received part of his education at the Jesuit college at Caen. There is, on the one hand, his statement that foreign exchange is ‘local interest,’ which suggests, though he does not say so quite explicitly, that he would have agreed to the phrasing that interest is ‘exchange over time’—the scholastic doctors considered, though they did not accept, an explanation on this line. And there is, on the other hand, Petty’s explicit statement to the effect that interest is a compensation ‘for forbearing the use of your own money for a term of time agreed upon whatsoever need you may have of it meanwhile.” This, especially if considered in the light of his disapproval of interest on money that the lender may claim at any time, is simply late scholastic doctrine. His various and not always felicitous considerations about the relation between interest and the rent of land—where he conspicuously failed to make an obvious contribution, namely, to derive the value of land

<sup>7</sup> *Treatise of Taxes*, ch. 5. This ‘discovery’ of the rent of location zealous admirers may easily construe so as to imply decreasing returns and, in the end, the *whole* of the Ricardian theory. Only, this would be quite unhistorical.

<sup>8</sup> The argument, a rather interesting illustration of the ways of primitive analysis, is simply this: if, *by the same amount of labor*, one man produces corn and another man produces silver, then both will in general be left with some corn or silver after the usual deductions have been made (he also deducts the necessary consumption of the producers or, alternatively, assumes that the silver producer, besides producing silver, has also supplied himself with the means for that necessary consumption). Now Petty holds that the values of these two net returns must necessarily be equal and, since silver is the monetary metal, this equality determines the money price of corn, hence the monetary value of the corn ‘rent.’ As a useful exercise, the reader should work out precisely why this argument is unsatisfactory and especially why it does not explain anything about the rent of land. This argument has sometimes been used in support of an attempt to credit Petty with a labor theory of value—the values of corn and silver being compared by means of the labor hours they embody. Our opinion on this matter will depend on the weight we are prepared to attribute to incidental use of such a standard of comparison. Petty’s father-and-mother slogan does not point in this direction.

by means of discounting its net return by the prevailing rate of interest—also recall scholastic arguments, although no outside influence need be invoked in order to understand why this problem should obtrude itself to any analyst.

## 2. BOISGUILLEBERT AND CANTILLON

Though, as a leader in the field of public finance, we have met Boisguillebert already and though, as a leader in the field of money, we shall meet him again before long, it is desirable not to miss him in the scenery we are trying to visualize now<sup>1</sup> as an important figure in the field of 'general theory.' He has been called a precursor of the physiocrats, and it is easy to see why: on the one hand, he was an energetic sponsor of the agricultural interest; on the other hand, we find in his pages such phrases as: all that is necessary is *laissez faire la nature et la liberté*. But though these facts do suffice to put him into line with the political thought of the physiocrats, they do not suffice to make him the ancestor of specifically physiocrat analysis. There is analytic affinity between his and Quesnay's views on money (see below, ch. 6) but on the whole, it seems better not to stress the relation too much. He was one more of those authors who saw the economic organism as an equilibrium system of interdependent economic magnitudes and who constructed this system from the angle of consumption—getting further, perhaps, than anyone before Cantillon. His economic sociology turned, in an almost Marxist spirit, upon two social classes, rich and poor, the existence of which he explained in a way that was to become

<sup>1</sup> Pierre le Pesant, Sieur de Boisguillebert (1646–1714), was a public-spirited member of the semi-hereditary civil-service gentry of prerevolutionary France (*noblesse de robe*) and lived mostly in Normandy removed from all the Paris influences that might have interfered with the originality of his ideas. Though, as we know, chiefly preoccupied with the problems of French fiscal policy and nearly as fact-minded as was Vauban, he differed from the latter not only in the much wider scope of his interests but also in the fact that he was theoretically articulate—perhaps more so than any writer before Cantillon. His chief works (*Le Détail de la France*; *Le Factum de la France*; *Traité de la nature, culture, commerce et intérêt des grains*; *Causes de la rareté de l'argent*; *Dissertation sur la nature des richesses, de l'argent et des tributs*) were re-edited, by Eugène Daire, in *Économistes financiers du XVIII<sup>e</sup> siècle* (*Collection des principaux économistes*, publ. by Guillaumin, 1843). Daire's prefatory note to this edition, so far as I know, is the first document of that Boisguillebert cult, the manifestations of which contrast so curiously with (and are in fact only explainable by) the persistent neglect of Boisguillebert's performance by the vast majority of economists. Daire considered him to be the first in the 'learned chain,' the further links of which are Quesnay, Smith, Ricardo, and Rossi (!); Boisguillebert was the Columbus *du monde économique*, and so on and so forth. In a more reasonable manner, this cult was revived by Professor H.W.C. Bordewijk in his excellent *Theoretisch-historische Inleiding tot de Economie* (1931). But Miss Roberts, in an otherwise very meritorious book (*Boisguilbert: Economist of the Reign of Louis XIV*, 1935), displays a bad case of what Lord Macaulay called the illness of biographers or lues Boswelliana. It was, however, a rebuke administered to me by Professor A.Gray in a review of Miss Roberts' book (*Economic History*, 1937) for not having, in an old essay of mine, paid due respect to Boisguillebert that sent me back to Boisguillebert's writings and in fact changed my own opinion of him. Also, see F.Cadet, *Pierre de Boisguilbert, précurseur des économistes* [i.e. of the physiocrats] (1870); A.Talbot, *Les Théories de Boisguilbert et leur place dans l'histoire des doctrines économiques* (1903); R.Durand, *Essai sur les théories monétaires de Pierre de Boisguilbert* [which is, perhaps, the more correct spelling] (1922).



quite common as the eighteenth century wore on. The stronger individuals, by *crime et violence*, get hold of the means of production and then do not want to work any more; also—a very modern touch that the reader will not fail to appreciate—these strong robbers, who have become rich, tend to stock money rather than goods (*hoarded* money, the ‘moloch of the world’!), and thereby depreciate real wealth and disturb the current of economic life. The economic principle of order he found in competition quite as clearly as did A. Smith more than half a century later. From the standpoint of analysis, this is decisive. That, on the strength of this, he did not (as did A. Smith) espouse unconditional free trade is immaterial, for into this practical conclusion enter so many other considerations and, in addition, so many personal preferences that its acceptance or rejection per se proves nothing for or against a man’s analysis. But though his conception of competitive ‘proportionate equilibrium’ was as definite as A. Smith’s, it was not more so: it did not occur to him to define it or to investigate its properties. Defining *richesse*, as Cantillon was to do, as the *jouissance* of everything that can give satisfaction (*plaisir*), he declared, as had Petty, that this wealth had no other sources but land and labor,<sup>2</sup> and then simply went on to say that the process of incessant transformation of land and labor into consumers’ goods will normally function without hitches if all commodities and services are produced on the unfettered initiative of competing producers—as if this did not require any proof. The first to attempt a (primitive) mathematical definition of equilibrium and a (also primitive) mathematical proof of that proposition was Isnard, who has as yet to conquer the position in the history of economic theory that is due him<sup>3</sup> as a precursor of Léon Walras.

Cantillon’s great work<sup>4</sup> fared better both because of its well-rounded sys-

<sup>2</sup> Petty, nevertheless, considered capital as accumulated labor. Boisguillebert’s set-up, however, is an early case of the ‘resolution’ of produced means of production into services of natural agents and labor that was to be a central feature of Böhm-Bawerk’s theoretical scheme (see below, Part IV, ch. 6), but Boisguillebert did not try to exploit this conception analytically.

<sup>3</sup> Achille Nicolas Isnard, an engineer about whom practically nothing is known, not even the exact dates of his birth and death, and who does not rate an article in the *Encyclopaedia of the Social Sciences*, wrote, besides another work that does not concern us, a *Traité des richesses* (1781) that seems to have been rescued from oblivion by a lucky chance: Jevons included it in his list of writings on mathematical economics that he appended to his *Theory of Political Economy*. The (almost) complete neglect of Isnard’s work is understandable, however, because the historic performance mentioned in the text is embedded in a conventional argument against physiocrat doctrines and other neither very original nor very interesting matter. Owing to the weakness in our field of the specifically scientific interest, progress on this fundamental line was almost unbelievably slow.

<sup>4</sup> Richard Cantillon (the date of his birth is uncertain, but is usually given as 1680; he died, presumably murdered, in 1734) was a Paris banker of Irish extraction. He influenced French economists much more than English ones. He was indeed plagiarized by some Englishmen and recognized by others, among the latter being A. Smith. But he had to be practically rediscovered by W.S. Jevons (‘Richard Cantillon and the Nationality of Political Economy,’ *Contemporary Review*, 1881), whereas in France he was never quite lost sight of. Thus, his influence is obvious in Canard’s *Principes d’économie politique* (1801), which, with apologies to the *Académie* that ‘crowned’ it—the same *Académie* that ignored Cournot and Walras—we shall only briefly mention again. On these grounds I class him as French, but I admit that anyone interested in such questions as the ‘nationality’ of a science can make out a strong case for claiming this Irish Frenchman as an English economist because of his descent from Petty. The *Essai sur la nature du commerce en*

*général* is supposed to have been written about 1730 and was, though in a very unconventional sense, 'published' soon after; that is to say, the manuscript circulated and exerted influence soon after. (This meant a lot in a small and highly concentrated professional circle.) The date of its actual (posthumous) publication, 1755, therefore has not the usual significance; there is a Harvard University reprint (1892) and an English trans. under the auspices of the Royal Economic Society (1932). See H. Higgs, 'Richard Cantillon,' *Economic Journal*, June 1891. I do not know of any other good study on our author unless it be the very useful article in *Palgrave's Dictionary*. Jevons' estimate fails by overstatement. In particular nothing could be more infelicitous than to call the *Essai* the 'cradle' of Economics: this is precisely what it was not. There is a brief 'Biographical Note on Richard Cantillon' in the *Economic Journal*, April 1944, by Joseph Hone.

tematic or even didactic form and because it had the good fortune to gain, long before its actual publication (see footnote 4), the enthusiastic approval and the effective support of two very influential men, Gournay and Mirabeau. What Petty failed to accomplish—but for what he had offered almost all the essential ideas—lies accomplished before us in Cantillon's *Essai*. True, it was not accomplished in the style of a pupil who at every step looks back over his shoulder for the master's guidance, but in the style of an intellectual peer who strides along confidently according to his own lights. Likewise, Quesnay strode on according to his own lights and was no more a mere pupil of Cantillon than Cantillon was of Petty. Nevertheless, few sequences in the history of economic analysis are so important for us to see, to understand, and to fix in our minds, as is the sequence: Petty-Cantillon-Quesnay. Cantillon's econometric zeal derived its direction from Petty. The supplement to his *Essai* which contained his computations has unfortunately been lost. But, as we shall presently see, the results presented in its text suffice to show that it was Petty's problems—mainly the 'par' between land and labor—and Petty's methods which inspired them. Moreover, dependence or possible dependence—there can be no certainty about it—extends beyond such important individual points as the theory of velocity of circulation or the theory of population to the fundamental features of the general theoretical set-up. Exactly the same conclusion will be seen to apply to the relation of Quesnay's work to Cantillon's. Affinity is obvious, differences being not less revelatory of it than are agreements: for a man may learn from another by criticizing him just as well as by accepting his teaching, and some of Quesnay's views look indeed as if they had been derived from Cantillon by the former method. And, again, it is precisely the fundamental features of Quesnay's analytic set-up that are unmistakably foreshadowed in Cantillon's work. An analogy may be helpful: Cantillon was to Quesnay, and Petty was to Cantillon, what Ricardo was to Marx. This leaves out Boisguillebert, though there are important affinities between him and Cantillon and, as regards money, between him and Quesnay. But just now it seems important to focus the reader's attention on one strong and simple line of development. The only way to raise all this above vague generalities is to take a bird's-eye view of Cantillon's work or, to phrase it differently, to present a Readers' Guide. This is what I proceed to do.

The First Part contains the fundamentals of the analytic structure. In the first chapter we get the general layout by means of the key concepts—land, labor, and wealth. Exactly as with Petty, and just as misleadingly, land, the source of material, and labor, the form-giving or productive agent, enter on equal terms to turn out wealth which *n'est autre chose que*

*la nourriture, les commodités et les agréments de la vie* (Boisguillebert's definition). Chapters 2–6 present what to all intents and purposes is an economic sociology. We get first a theory of social classes: ownership of land—itself based upon conquest and violence as with Boisguillebert—creates the three fundamental 'natural' classes of landlords, farmers, and laborers (traders and entrepreneurs do come in, along with artists, robbers, lawyers, beggars; but they are added to this schema, not really fitted into it). Then we get a very interesting theory of the origin of villages, the emergence of townships (Cantillon adopted a 'market theory' of towns, the theory that makes them develop first from periodical, then from permanent markets), cities, and capital cities. Besides creating the form in which many a nineteenth-century textbook was cast (in a sense even Alfred Marshall's treatise), Cantillon thus clearly proved his awareness of the fact, which smaller minds so often failed to grasp, namely, that the problems of any analytic social science necessarily divide up into two methodologically different groups: the group that centers in the question how the actual behavior of people produces the social phenomena we observe, and the group that centers in the question how that behavior came to be what it is. In Chapter 3 we also learn something about location—this is perhaps the first attempt (if we neglect embryonic considerations in the agricultural literature) at making some headway in this field.

Transition to pure economics—the economics that deals with behavior within the social framework described—is effected in Chapters 7–9 where Cantillon, for future reference, settles a number of preliminary questions concerning (a) differences in remuneration as between laborers and artisans and as between artisans in different employments, and (b) population. The former subject was to be a favorite with later writers, particularly A. Smith, and became a standard topic in the standard text of the nineteenth century. The latter subject will have to be dealt with in the chapter on population, wages and employment which follows. But it is just as well to record here, by anticipation, that Cantillon (clearly developing views of Petty) lets population, on the one hand, adapt itself to the demand for labor and, on the other hand, be regulated by a law of minimum-of-existence wages, so that his authority might be claimed for a Malthusian view were it not for the fact that he also (in this still more like Petty) looked upon labor as the 'natural riches' of a nation (ch. 16). This last points in a different direction, though there is really no contradiction between the two ideas. Both had become common doctrine in the seventeenth century.

Having thus prepared the ground, our author presents (ch. 10) a cost theory of normal price or value (*valeur intrinsèque*: never mind the objectionable word, it is quite harmless). This, if anything, falls short of the theory of the scholastics except that Cantillon, going through with Petty's theory, defined his cost in terms of the quantities of land and labor which enter into the production of each commodity. The obvious problem

thus raised—we might call it Petty's problem—which Ricardo tried to dodge by eliminating land (see below, Part III, ch. 6) so as to be left with one factor only, Cantillon tackles in Chapter 11 by the alternative expedient: labor is reduced to land by the consideration that the labor *du plus vil Esclave adulte vaut au moins... la quantité de terre* that must be employed to provide for his needs. Or, rather, since according to Halley's tables about half the children died before reaching the age of 17 (and also for other reasons) it was roughly double that quantity. Other laborers get more than the *plus vil Esclave*, but this is either because their labor costs more land to produce or because their remuneration is subject to risk. The figures on workmen's budgets that Cantillon held to justify this estimate were in the lost supplement, but we must in any case credit Cantillon with having made the first important step in this particular field of research that was to develop considerably before the century was over. For the rest, it is not necessary to enter here into criticism either of the land-labor theory of value itself (if such it may be called) or of the particular attempt to make it numerically operative. As far as this goes, it must suffice to say that the latter is not what it seems to be, that is, complete nonsense, and that success on this line is not out of the question at some distant future. Let us repeat, however, first, that the really important thing is the message of econometric research that comes to us from this attempt—the message that *numerical* calculations must be at the basis of any science, however 'theoretical,' that is quantitative by nature; and, second, that the *arpents* of land per year (1 arpent=330 sq. ft.) played exactly the same role in Cantillon's analysis that days of labor played in Ricardo's. And let us add that we have here the positive kernel of Quesnay's theory of normal value: his philosophies about the value-creating powers of nature added as little to the operative content of the Petty-Cantillon theory as Marx's philosophies about the value-creating power of labor added to the operative content of the Ricardo theory.

With the deviations of actual prices from this norm—that he reduced from cost in terms of land and labor to cost in terms of land alone—Cantillon dealt very carefully. There is nothing in the *Essai* that could rank as a theory of monopoly, which is the more serious because, as will be evident from the rest of our narrative, Cantillon reasoned on the hypothesis of the most perfect of perfect competitions so that any imperfections in it naturally acquire particular importance. But there is a lot about temporary deviations because of other reasons, that is, Cantillon paid much attention to the problem of market price as distinguished from normal price—exactly as did A. Smith later on. One feature of his treatment is worth noting because it persisted practically to J. S. Mill. Like all 'classics' of the nineteenth century, Ricardo especially, Cantillon never asked the question *how* market price is related to normal price and precisely *how* the latter emerges—if indeed it does emerge—from the supply and demand mechanism that produces the former. Taking this relation for granted, he was led to treat market price as a separate



phenomenon *and to restrict the supply and demand explanation to it.* Thus emerged the superficial and, as the later development of the theory of value was to show, misleading formula—normal price is determined by cost, market price is determined by supply and demand—of which we shall see more in Part III.

Going on, we see Quesnay's figure still more clearly looming in the future, and Boisguillebert's no less clearly looming in the past. All the classes (*ordres*) of society and all the men in a state subsist or enrich themselves at the expense of the landowners (ch. 12). In the light of Chapter 14, this will be seen to mean no more than that, whereas every other income item is being balanced by a cost item, including in costs the necessary living expenses of the receiver, the landowners' rent is the only one that is not so balanced because, to use a later phrase, it is a return to a 'costless,' that is, non-produced, natural factor. Therefore, income from land, not being bound to certain more or less predetermined uses, can be spent in any way that the whims of the landowners may suggest. Its expenditure is the undetermined and, precisely because of this, the determining and active factor in the total of national consumption—hence also in the total of national production, so that everyone's economic fate depends upon *les humeurs, les modes et les façons de vivre* of the prince and the landowning aristocracy. These *humeurs* determine *les usages auxquels on emploie les terres*, and, in particular, how many people will be employed and able to make a living in a country (ch. 15), and how its balance of trade will look if both sides of it are measured in terms of land—which is the criterion he applied for judging the advantage or disadvantage a country derives from foreign trade. Not all of this reappears in physiocrat writings, not, for example, the last-mentioned point. But most of it does, and it is therefore desirable to make it quite clear what we are to think of it. Several aspects must be distinguished. First there is the theorem that pure rent is a net return that is explained by the productivity of scarce natural agents: this is a true and valuable proposition to which, after many wanderings, theory returned about 1870. Second, there is the statement that this net return is the only one, and that it is therefore agriculture which produces the whole net income of society, no other economic activity producing any of it. This, on the face of it, is wrong but—like the labor theory of value—it can be made true by the introduction of a sufficient number of auxiliary assumptions or postulates—such as absolutely perfect competition, stationary state, absence of urban rent, minimum-of-existence wages so that labor becomes a product of what the laborer consumes, and others<sup>5</sup>—which, however, destroy the statement's practical value. Third, there is the emphasis upon the importance of this net income's being promptly spent in order to keep the economic process going. This point played a small role with Cantillon but more with Boisguillebert before him and with Quesnay after him. And fourth, there is the emphasis—that is specifically Cantillon's—upon the way in which the net income is spent. A common-sense case can obviously be made out for this, especially for the society that stood before Cantillon's eyes.

Now, the *produit de la terre* is, so Cantillon asserted, divided into

<sup>5</sup> The reader will derive benefit from working them out fully.

three approximately equal parts (*les trois rentes*), one-third replacing the farmer's outlays, including his own necessary keep, another third going to him as 'profits,' and the last third to the *seigneurs*. These landlords spend the equivalent of their third of the product of land in the towns where approximately half of the total population is supposed to live. The farmers also spend something on the manufactures produced in the towns, namely, one-fourth of their two-thirds. Thus, the equivalent of one-half ( $\frac{1}{3} + \frac{1}{6}$ ) of the total product of agriculture finds its way to the towns, into the hands of the *marchands et entrepreneurs*, who expend it in turn on foodstuffs and raw materials and so on. Interpretation of this schema, for which Cantillon himself claims no more than the value of a very rough thumb-nail sketch, presents various difficulties into which we cannot enter. But it also presents many points of interest, of which we shall mention two.

First, Cantillon had a clear conception of the function of the entrepreneur (ch. 13). It was quite general, but he analyzed it with particular care for the case of the farmer. The farmer pays out contractual incomes, which are therefore 'certain,' to landlords and laborers; he sells at prices that are 'uncertain.' So do drapers and other 'merchants': they all commit themselves to certain payments in expectation of uncertain receipts and are therefore essentially risk-bearing directors of production and trade, competition tending to reduce their remuneration to the normal value of their services. This, of course, is scholastic doctrine. But nobody before Cantillon had formulated it so fully. And it may be due to him that French economists, unlike the English, never lost sight of the entrepreneurial function and its central importance. Though presumably Cantillon had never heard of Molina and though there is nothing to show that he actually influenced J.B.Say, it is none the less true that 'objectively' his performance on this point—and this was not suggested by Petty nor developed by Quesnay—is the link between those two. Second, if we look once more at Cantillon's sequence of payments and deliveries, which starts from the tripartite division of the gross product or revenue of farming—the *trois rentes*—and, through a number of definite stations, takes us back again to its starting point, the farmers, we immediately feel that we are beholding something that is novel, something that is not explicitly present in the schemes of Cantillon's predecessors or contemporaries—not even in Petty's—or in fact in the schemes of most theorists of any time. From them, we get indeed statements of general principles that govern the economic process. But they leave it to us to visualize this process itself as it runs its course between social groups or classes. Cantillon was the first to make this circular flow concrete and explicit, to give us a bird's-eye view of economic life. In other words, he was the first to draw a *tableau économique*. And, barring differences that hardly affect essentials, this *tableau* is the same as Quesnay's, though Cantillon did not actually condense it into a table. Cantillon's priority is thus beyond question as regards the 'invention' that Mirabeau, indulging

as usual his generous ardors, compared in importance to the ‘invention’ of writing. But since Quesnay’s formulation is so much more famous we shall add what there is to add in connection with his work.

It stands to reason that the *tableau* method offers special opportunities for investigating monetary phenomena, especially velocity of circulation—this is one of its chief advantages. In fact, Cantillon is at his best in this field. Chapter 17 of Part I, which presents the fundamentals of monetary theory, is not particularly original: we get pretty much the old stuff, including the divisibility, portability, et cetera, of gold and silver that recommend them for the monetary function. But the whole of Part II (which, however, also includes the theories of barter, market price, and so on) is devoted to money, credit, and interest, and so is much of Part III (mainly on foreign trade), where we find Cantillon’s analysis of banks, bank credit, and coinage. Consideration of the main items of this brilliant performance, which in most respects stood unsurpassed for about a century—the automatic mechanism that distributes the monetary metals internationally is, for example, almost faultlessly described, an achievement usually credited to Hume—will however be reserved for subsequent chapters.<sup>6</sup>

### 3. THE PHYSIOCRATS

#### [(a) *Quesnay and the Disciples.*]

The small group of French economists and political philosophers who were known in their own day as *Les économistes* and are known to the history of economics as Physiocrats presents strongly characteristic features to even the most perfunctory backward glance. But, when seen from our standpoint, the group really reduces to one man, Quesnay, to whom all economists look up as one of the greatest figures of their science. I know of no exception, though there are no doubt some differences in the reasons which different people would proffer in motivation of their individual agreement with the unanimous vote. Of the other members of the group we need to notice only Mirabeau, Mercier de la Rivière, Le Trosne, Baudeau, and Dupont. They were all of them disciples, nay, pupils of Quesnay in the strictest and most meaningful sense these terms will bear—disciples who absorbed and accepted the master’s teaching with a fidelity for which there are but two analogues in the whole history of economics: the fidelity of the orthodox Marxists to the message of Marx and the fidelity of the orthodox Keynesians to the message of Keynes. They were a school by virtue of doctrinal and personal bonds, and always acted as a group, praising one another, fighting one another’s fights, each member taking his share in group propaganda. They would in fact illustrate the nature of that sociological phenomenon to perfection had

<sup>6</sup> A. Marshall (*Principles*, p. 55, n. 1) states that Cantillon was in important respects anticipated by Barbon (see below, ch. 7). Unless this refers to a certain (but not at all close) similarity between Cantillon’s and Barbon’s views on foreign trade—which both of them had in common with many other writers—I fail to see what Marshall can have meant.

they not been something more than a scientific school: they formed a group united by what amounted to a creed; they were indeed what they had been called so often, a Sect. This fact naturally impaired their influence upon every economist, French or foreign, who was not prepared to take the vows to One Master and One Doctrine: moreover, it invited wholesale rejection of their teaching even by people who agreed with them on many points of theory as well as of policy or even by people who were under obligation to them. Some serious foreign scholars, particularly the leading Italians—among them Genovesi, Beccaria, and Verri—were indeed friendly. But so far as analysis and not policy is concerned, this friendliness meant little more than occasional lip service to specifically physiocrat tenets and should not mislead us into calling them physiocrats. Enthusiastic adherents of any importance are to be found in Germany only: it will suffice to mention the Margrave of Baden, Schlettwein, Mauvillon, and the Swiss, Herrenschand. The necessary minimum of facts about the men so far mentioned is assembled below.

François Quesnay (1694–1774), the son of a moderately successful lawyer, was above all else a surgeon-physician. His distinguished professional career absorbed the bulk of his energy and never left more of it for economics than a man may be able to reserve for a passionately beloved hobby. He wrote a medical treatise on bleeding, became General Secretary of the Academy of Surgery and editor of its journal, surgeon and eventually first physician to the king. Actually, he was medical adviser to Mme de Pompadour, in whom he found a protectress who was not only extremely kind but also intelligently understanding, a fact that assured to him a strategic position in the intellectual life of Versailles and Paris and should assure to the lady the lasting gratitude of economists. He was pedantic and doctrinaire to a degree and must have been an awful bore. But he had all the force of character that often goes with pedantry. It is pleasant to add that he was also thoroughly upright and honest. His loyalty to his protectress and his imperviousness to the typical temptations of his environment are amply established by an anecdote related by Marmontel that is more amusing than proper. The fact that he was the only creative force in his circle is somewhat obscured by his inability or unwillingness to work out his ideas fully and systematically. We will notice of his economic writings (his only voluminous work was the *Essai physique sur l'économie animale*, 1736) the *Encyclopédie* articles 'Fermiers' (1756), 'Grains' (1757), 'Hommes' (1757); the *Tableau économique* (1758; see below, sub d); the article 'Droit naturel' (1765) and the dialogue 'Du Commerce' (1766), both in the *Journal de l'agriculture, du commerce et des finances*; also the article 'Despotisme de la Chine' (*Éphémérides*, 1767), which has given rise to speculations on the subject of Chinese influence upon the physiocrats. (See, e.g., the article under this title by L.A. Maverick, *Economic History, Supplement to the Economic Journal*, February 1938.) Finally, there are Quesnay's *Maximes*, a highly revealing supplement to, or political commentary on, the *Tableau* (1758), and the *Oeuvres économiques et philosophiques*



edited by August Oncken with an interesting introduction (1888). All histories of economics deal with Quesnay, of course, the treatment in Gide and Rist calling for special notice. See H.Higgs, *The Physiocrats* (1897); G. Schelle, *Le Docteur Quesnay* (1907); G.Weulersse, *Le Mouvement physiocratique en France de 1756 à 1770* (1910), and *Les Physiocrates* (1931); M.Beer's *Inquiry into Physiocracy* (1939) is, quite rightly, almost entirely devoted to Quesnay himself.

Mirabeau we have met already (see above, ch. 3). After his conversion by Quesnay he devoted himself wholeheartedly to the cause of physiocracy, without however completely surrendering independent judgment. Two of his works already mentioned, the *Théorie de l'impôt* and the *Philosophie rurale*, may have been written in collaboration or consultation with Quesnay but are certainly not pure Quesnayism and contain things of which Quesnay cannot have approved. Nevertheless, the *Philosophie* (1763) was generally accepted as the first of the four textbooks of physiocrat orthodoxy. The sixth Part of *L'Ami* presented among other things Mirabeau's explanation of the *Tableau*.

Pierre-Paul Mercier de la Rivière (also known as Lemercier; 1720–93), whose impulsiveness or bad manners made him more conspicuous than he deserved to be, was responsible for the second of those textbooks, namely, *L'Ordre naturel et essentiel des sociétés politiques* (1767, reprint with useful introduction by E.Depitre, 1909), which Dupont de Nemours republished, in abstract, with a title that is revelatory of the group's frame of mind: it read *De l'origine et des progrès d'une science nouvelle* (1768). The first thirty-five chapters of Mercier's work are devoted to topics of political theory, which was what primarily interested him—Quesnay's scheme of *despotisme légal* that was really no despotism at all. The economics that occupies the remaining nine chapters is negligible. Both Diderot and A.Smith, however, thought highly of the book.

G.F.Le Trosne (1728–80) was a much abler man. But he was a lawyer and mainly interested in the natural-law aspects of the physiocrat system. In the field of economics he embraced physiocrat orthodoxy with some reservations. His *Liberté du commerce des grains* (1765) and his *De l'intérêt social...*, second volume of *De l'ordre social* (1777), are meritorious performances, though they are not more than that.

The Abbé Nicolas Baudeau (1730–92) began as an enemy but had his day of Damascus in 1766 and from then on proved a most useful popularizer and controversialist as well as an efficient editor. His *Première introduction...* (1771; reprint with instructive introduction by A. Dubois, 1910) is the third of the group's textbooks, perhaps the weakest of all.

The fourth and best of these textbooks was the short *Abrégé des principes de l'économie politique* (publ. first in vol. I of the *Éphémérides*, for 1772) by Karl Friedrich von Baden-Durlach.

Pierre S.Dupont de Nemours (1739–1817), who entered adult life as an all-round literary free lance, was by far the ablest of the lot. Napoleon I

once described Marshal Villars as a 'fanfaron d'honneur.' Similarly we can describe Dupont as a 'go-getter' who never forgot honor and principle and who, in particular, retained both a genuine interest in purely scientific questions and loyalty to the physiocrat creed throughout a career that offered every excuse for dropping them. He was won over to the cause of physiocracy by shrewd old Quesnay himself, who knew perfectly with whom he was dealing and never pulled the curb too sharply. Dupont immediately began to write copiously and effectively, publishing, among other things, a free-trade tract on grain exports and imports, 1764. On the strength of his success as a writer and editor, he secured various important employments under Turgot and later on under the last great minister of the *ancien régime*, Vergennes. We need not follow him through the ups and downs of life which, through the *Constituante* and the *Directoire* finally landed him—a Roman would say, with the loss of his shield—in the United States. Nor need we record his numerous publications, all of which bear witness to the brilliance of his talents, though these talents were those of the pianist and not those of the composer. The interested reader finds all except his letters in G. Schelle's *Dupont de Nemours et l'école physiocratique* (1888); also see Weulersse's work previously quoted.

As already mentioned, the school was thoroughly alive to the importance of propaganda and some of its members, Baudeau and Dupont especially, were very good at it. They founded discussion groups, worked upon individuals and agencies in key positions (the *parlements* especially), and produced a large quantity of popular and controversial literature. Their exploits in economic journalism, however interesting in themselves, would not have to be mentioned here were it not for the fact that, rising above it, they also produced the bulk of the material that went into the pages of the first scientific periodicals in the history of economics. The *Journal Oeconomique* (1751–72) had from the first kept a highly creditable level, rendering such services to scientific economics as the publication of translations of Hume (an important fact to keep in mind) and Josiah Tucker. The *Journal d'agriculture, du commerce et des finances* (1764–83) was intended from the first to supplement the *Gazette* by taking care of 'heavier' articles. The physiocrats partly controlled, partly had ready access to, this journal in 1765–6 and 1774–83. In 1765, however, Baudeau founded the famous *Éphémérides du citoyen* ('the citizen's daily records' would render this title, though it was a weekly), which, after Baudeau's conversion (from protectionism) in 1766 became identified with physiocracy. In 1768 Dupont took over. It was suppressed, owing to its strong hostility to the policy of the Aiguillon-Maupeou-Terray government, but recalled to life by Turgot (1774), whose policies it of course supported and some of whose enemies it attacked. The *Nouvelles éphémérides* died in 1776, and several efforts at resuming publication ended speedily in failure. But in a sense the short-lived *Journal d'économie publique, de morale et de politique* (founded 1796), though neither physiocrat nor the equal of the physiocrat journal, was the

same kind of thing—as was in fact the later *Journal des économistes*. In more than one respect, therefore, the *Éphémérides* should be remembered by the student of the history of economics as one of the major achievements of Quesnay and his group. The reader will find an excellent sketch of this journal's career, giving all the essential facts in a short compass, in Palgrave's *Dictionary of Political Economy*, article 'Éphémérides' by Professor S. Bauer. I. Iselin founded a German replica, not equal to the prototype (*Ephemeriden der Menschheit*, 1776–82).

The impressions a reader gets as he wades through the volumes of the *Éphémérides* (I have been able to do so only to 1772) will of course vary from one reader to another. Personally, I have been greatly struck by a certain similarity they display to the scientific journals of late nineteenth-century Marxist orthodoxy, especially the *Neue Zeit*: the same fervor of conviction, similar controversial talent, quite the same inability to take any other but the orthodox view of anything, comparable capacity for bitter resentment, and equal absence of self-criticism. This shows particularly in the review articles. But solid merit all but obliterates these blemishes. Even apart from Turgot's *Réflexions*, which are, of course, in a class by themselves, and the explanations of the *Tableau*, there is a lot of thoroughly good stuff. Dupont, for example, contributed what is to my knowledge the first genuine history of economics. Masses of historical material are presented. Contemporaneous events from all corners of the globe are currently reviewed, though always from a narrowly sectarian point of view. All in all, the first of the long series of scientific journals of economics set a high standard for a long time to come. Its international success was well deserved.

The three Germans mentioned above need not detain us long. As regards the Margrave of Baden-Durlach (later Grand Duke of Baden, 1728–1811), who politically was one of the ablest public men of his time, we need add only a reference to his correspondence with Mirabeau and Dupont (edited, with introduction by K. Knies, 1892), which will repay perusal. J. A. Schlettwein (1731–1802) was the Margrave's executive collaborator in the experiment on the practical application of the physiocrat recipe to the village of Dietling which he reported in *Les moyens d'arrêter la misère publique...* (1772). Neglecting his later and fuller account of this experiment, we shall be content to mention his *Grundfeste der Staaten oder die politische Oekonomie* (1778). His almost turbulent activity in the service of physiocracy, considered as a practical scheme of agrarian reform, made a stir wherever he went and secured him one of those traditional positions in the history of scientific economics for which no analysis of published performance can unearth a justification. In one respect only can this man interest us, excellent though he no doubt was in his way. He illustrates to perfection the type of economist who will. I fear never die out and who will forever discredit economics in the eyes of men whose approval is worth having. This is the type that says: here is the patent medicine that will cure all ills, 'the most important thing

for the public' (these words are the title of one of his publications); in fact, the only thing that is important for humanity, is to swallow it. Jakob Mauvillon (1743-94) was a still more excellent man in many respects, but still weaker as an economist. His essay on luxury included in his *Sammlung von Aufsätzen...* (1776-7) is negligible. His *Physiokratische Briefe an den Herrn Professor Dohm* (1780) is in or near the center of a German controversy on physiocracy, for the sake of which alone this publication deserves to be mentioned. But this controversy itself needs to be mentioned only because some interest attaches to the fact that the physiocrat doctrine, though very little understood in its true scientific importance and mainly discussed in its practical aspects, could raise a full-dress debate around 1780. However we use the opportunity to refer to the best performance on behalf of physiocracy, K.G. Fürstenau's *Apologie des physiokratischen Systems* (1779). Of opponents it will suffice to mention C.K.W.von Dohm (*Kurze Vorstellung des physiokratischen Systems*, 1778) and J.F.von Pfeiffer (*Antiphiysiokrat*, 1780). The latter's voluminous systematic works of the Justi type, no doubt marked by strong practical sense, have earned for him high praise from several historians. Jean (Johann) Herrenschwand (1728-1811), was a late physiocrat. Perhaps he should not be called a physiocrat at all, for he was not orthodox. But he was an able economist. His chief works were *De l'économie politique moderne* (1786); *De l'économie politique et morale de l'espèce humaine* (1796); *Du vrai principe actif de l'économie politique* (1797). There is a German monograph: A.Jöhr, *Jean Herrenschwand* (1901).

A sect with a creed and a political program naturally presents many aspects and calls for interpretative analysis from many standpoints other than ours: we shall first glance at some of these, then consider the bare bones of Quesnay's economic analysis, and especially the *Tableau économique*.

[(b) *Natural Law, Agriculture, Laissez-Faire, and l'Impôt Unique.*]

Physiocracy<sup>1</sup> was nonexistent in 1750. *Tout Paris* and still more Versailles talked about it from 1760 to 1770. Practically everybody (excluding professed economists) had forgotten it by 1780. This meteoric career will be readily understood as soon as we realize the nature and extent of this success, that is to say, as soon as we realize precisely *what* it was that, for about two decades, succeeded so conspicuously, *how* it succeeded, and *why*.

<sup>1</sup> The term means Rule of Nature and was used by Dupont as a book title in 1767. But according to Oncken it was used earlier by Baudeau and is perhaps due to Quesnay himself. The question is of no importance.



Above (in Chapter 2) we have interpreted Quesnay as a philosopher of natural law. In fact, Quesnay's theories of state and society were nothing but reformulations of scholastic doctrine. The motto, *Ex natura jus, ordo, et leges* might have been, though it presumably was not, taken from St. Thomas. The physiocrat *ordre naturel* (to which there corresponds in the world of real phenomena an *ordre positif*) is the ideal dictate of human nature as revealed by human reason. What difference there is between Quesnay and the scholastics is not to the former's credit. We have seen that St. Thomas and still more the late scholastics, such as Lessius, were perfectly aware of the historical relativity of social states and institutions and that they always refused to commit themselves, in mundane affairs, to an invariable order of things. But Quesnay's ideal order is invariable. Moreover, in his paper on *Droit naturel*, he defined Physical Law as the 'regulated (*réglé*) course of all physical events which is evidently the most advantageous to mankind,' and Moral Law as 'the rule (*règle*) of every human action conforming to the physical order evidently most advantageous to mankind': these 'laws' form together what is called 'natural law,' and they are all immutable and the 'best possible ones' (*les meilleures lois possibles*). In the case of the scholastic doctors, such principles were confined to the realm of metaphysics and not directly applied to historically conditioned patterns. In the case of Quesnay they were directly applied to particular institutions, such as property. And Quesnay's political theory—both analytically and normatively—turned upon a monarchical absolutism in an uncritical and unhistoric manner that, as we have seen, was also quite foreign to the scholastics.<sup>2</sup> Now, we know how well the old natural-law system fared in the eighteenth century and how acceptable it proved to be, in its essential features, to *la raison*. Therefore, Quesnay's particular form of it, some non-essential frills excepted, fell in with the intellectual fashion of the hour: everybody readily understood this part of his teaching, sympathized with it from the start, and felt at home when discussing it. And, unlike other votaries of *la raison*, Quesnay harbored no hostility either to the Catholic Church or to the monarchy. Here, then, was *la raison*, with all its uncritical belief in progress, but without its irreligious and political fangs. Need I say that this delighted court and society?

Again, agriculture held a central position in Quesnay's program of economic policy as well as in his analytic scheme. And this feature of his teaching, too, fell in with the fashion of the hour. Just then everybody was raving about agriculture. This enthusiasm had two different sources that reinforced each other, though they were really quite independent. First, the revolution of agrarian technique gave a novel actuality to agricultural problems. It amounted to less in France than it did in England, but it produced just as much drawing-room talk in Paris as it did in London. Second, the illogical association of the natural rights of men with a glorified primitive state of society and the not less illogical association of the latter with agrarian pursuits gave to agriculture a drawing-room popularity that had, to be sure, no relation to Quesnay's serious

<sup>2</sup> It should be observed, however, that in Quesnay's time and country there was perhaps much practical wisdom in this. For in the actual situation of eighteenth-century France, the reforms advocated by the physiocrats could have been carried (without revolution) only by the strong hand of a despotic monarch. The hostility of the physiocrats against 'privilege' of any kind was therefore not, as one might think, in contradiction to their allegiance to monarchy but on the contrary the very reason for it.

teaching but nevertheless blew wind into his sails. We have the picture if we add one more touch. The dogmatizing doctor's apartment in the entresol of the palace of Versailles was not far from the well of all preferment, Mme de Pompadour's suite. The ambitious on the lower rungs of the ladder could hardly fail to perceive this fact, and some of them may have thought that an hour's boredom in the former was a cheap price to pay for a good word dropped in the latter. Marmontel was quite frank about this, and it is safe to assume that he was not the only one to make the discovery.

Such things do matter at all times though different environments have different methods of favoring doctrines without absorbing, or caring for, their real scientific import, if any. Expressed in terms of that particular environment, Quesnay's success was primarily a *succès de salon*. Polite society talked physiocracy for a time but very few people outside took much notice of it except by way of sneering at it. There was thus a physiocrat fashion but there was no physiocrat movement in the sense in which there was (and is) a Marxist movement, especially not one rooted in agrarian class interests. But what about the political influence of the physiocrats of which we read so much? What about their historic role in combating privilege, abuses, and all the horrors of protection? The reader would completely misunderstand the drift of the argument presented, as well as the reasons why it was thought necessary to present it, if he concluded from what has been said so far that this influence should be equated to zero. No group so well disciplined and so bent upon propaganda as the physiocrats were can fail to exert some influence. For instance, such a group as our own League of Women Voters is a cog in our political engine that no realistic analysis of our time can afford to neglect entirely. The point is that the physiocrat group exerted this kind of influence and no other, and that their importance as a motive power of politics was small. A brief examination of Quesnay's recommendations will establish this.

These recommendations may for our purposes be reduced to two: laissez-faire, including free trade, and the single tax on the net income from land. In order to arrive at a true estimate of Quesnay's competence as a 'practical' economist, it is necessary with regard to both to distinguish doctrinal frills from underlying common sense. Thus, Quesnay taught laissez-faire and free trade as absolute norms of political wisdom. But these imperatives must be viewed in the light of the physiocrats' hostility to all kinds of privileges and to a great many things that seemed to them to be abuses, monopoly positions among others. Since these could not have been abolished without a good deal of governmental 'interference,' Quesnay urged upon government what really was an activist policy, and not at all one of doing nothing. Moreover, in spite of his wholesale condemnation of government regulation or control, it is relevant to observe that what he actually faced were regulations that were inherited from the past and no longer fitted current conditions: the absolute norm of laissez-faire acquires in such a case a relative significance that differs greatly from what its absolutism suggests. Finally, we must not forget that French agriculture in 1760 was not interested in protection: there was no danger of large wheat imports as a normal phenomenon; and free trade in agricultural products would have, if anything, increased their prices. We shall presently discover reasons for doubting whether Quesnay would have been a thorough-going free trader if he had written in 1890. Similarly, as regards his single tax, we must distinguish the common-sense idea from the trappings that made it an object of ridicule. To simplify and rationalize the French system of taxation by basing it upon a tax on net income was

evidently a sensible idea. To base it *exclusively* on such a tax was a doctrinaire's way of putting this idea. To base it exclusively on a tax on the net rent of land was Quesnay's way of applying his theory that the net rent of land was the only kind of net income in existence and that any tax must ultimately fall upon it in any case. This theory may be untenable. Even if it were tenable as an abstract proposition, its application to the practical question of taxation would be indefensible because the mere presence of friction in the system would be enough to produce net returns other than the rent of land. But the value of the fundamental idea is not entirely destroyed by this particular twist. Moreover, the suggestion to tax the pure rent of land, in view of the fact that it was then not directly taxed at all, carried sense whatever the frills in which it was presented—sense that cannot be claimed for later proposals of a similar nature, such as Henry George's. The physiocrat contribution to public finance in fact stands out well in the group's textbook on it, Mirabeau's *Théorie de l'impôt* (1760). This work—Dupont called it 'sublime'—relieved the stress upon the single-tax panacea by properly emphasizing the importance of administrative reforms, of revenue from the *domaine*, the mint, the post office, a special tax on tobacco production, and a salt tax: all of this helps to remove the stigma of freakishness that has been put upon the *impôt unique*.

But observe that there was nothing in the physiocrat general program that was substantially new. The traditional assertion to the contrary may be traced (1) to the understandable desire of historians of the group to protect its priorities against A. Smith, in which they were, of course, quite right; (2) to the optical illusion that will victimize any historian of doctrine who concentrates his vision upon a particular group and pays inadequate attention to what lies around and, historically, before it; (3) to Quesnay's way of quaint and distinctive formulation, which separates his views from similar ones by over-accentuated but all the same artificial dividing lines. Thus, the single-tax idea was as we know an old one; if Quesnay can be said at all to have done something novel with it, then his contribution consists in his having given it that particular twist which few of us will hail as an improvement. In matters of free trade it may indeed be held that the physiocrats were the first *group* to advocate unconditional free trade though they had been anticipated by individuals such as Sir Dudley North. But for us this is not important. Much more important is it that as regards grasp of the scientific principles involved, many of their contemporaries, including their professed enemies such as Forbonnais, were their equals. It cannot be too often repeated that sponsorship of a particular practical conclusion proves nothing for or against a man's insight into economic causes and effects. In fact, if equality of insight be doubted at all, the doubt should be raised against Quesnay. For 'whole-hog' positions, though there are many other explanations for them, usually point to some defect in insight rather than to the contrary.

Nevertheless, Quesnay's views about the economic process and his policies being what they were, it is of course possible to trace to him practically the whole arsenal of nineteenth-century liberal argument. But all those ideas floated toward nineteenth-century writers and politicians in a much broader stream, in which the physiocrat element was but a small part. This also applies to the politicians of the *Constituante* and of the Revolution in general. Nor is there more justification for the claim that physiocrat influence was responsible either for Turgot's appointment or for his policy (see below, sec. 4). The only instances of practical influence were the experiments with the *impôt unique* made by Karl Friedrich of Baden-Durlach and by Peter Leopold, Grand Duke of Tuscany. However, it

has been remarked already that Quesnay, if he got rather more than his due as a patron saint of economic liberalism, has to this day been receiving less than his due as a scientific economist, if we neglect the glowing eulogies of his immediate disciples. Especially that kind of recognition—the only serious one—that consists in the acknowledgment by competent workers of obligation, or at least of priority, in definite points, has been dealt out to him rather sparingly. One reason for this was that his analytic work was little understood and that in consequence later economists actually did not owe as much to him as one might think. Another was the presence in his teaching of what people felt to be an element of oddity. In the case of A. Smith both reasons seem to have been operative: almost certainly he did not fully grasp the importance of the *tableau économique*; quite certainly he was overanxious to avoid associating himself with anything that was in any way odd. Karl Marx was the only first-rank economist to give Quesnay his due.

[(c) *Quesnay's Economic Analysis.*]

Recall Quesnay's definition of Natural Law. As soon as we realize all its implications we shall understand what those historians mean who, pointing to a theological bent in Quesnay's thought, either deny the analytic character of his work or, if they go not quite as far as that, at least hold that Quesnay's religious beliefs must have been a factor in shaping his economics.<sup>3</sup> There may be some truth in this as far as Quesnay's views on economic policy and his value judgments are concerned. But there is no truth in this as regards his economic theory. It is not decisive of course that Quesnay himself repeatedly claimed that he was faithfully describing facts.<sup>4</sup> But application of our own test yields the same result and establishes the validity of that claim: the reader will presently see that no economic proposition of Quesnay's rests upon any theological premisses or would be affected by discarding what we know about his religious beliefs. This proves ipso facto the purely analytic or 'scientific' nature of his economic work and leaves no room for extra-empirical influences. Let us now consider briefly the salient features of his theoretical set-up.

I. All reasoning on economic topics necessarily implies recognition of an Economic Principle of some sort. Precisely because of this it is difficult to say when and by whom such a principle was first formulated. But if we wish to stress explicitness of formulation, then, I think, priority (as against the Italians) belongs to Quesnay's rule of conduct: greatest satisfaction (*jouissance*) to be attained with the smallest expense or, as he goes on to say, labor-pain. The importance of this rule or principle, considered as a contribution to formal theory—or, as we may also call it, to the pure logic of

<sup>3</sup> This point will stand out particularly if we compare Quesnay's definition with Montesquieu's, whose natural laws are nothing but *rappports nécessaires qui dérivent de la nature des choses*, a definition that cannot be commended too highly.

<sup>4</sup> Two references may be useful: first, in the dialogue *Du commerce* (1766), where Quesnay expounds part of his theory of capital, he invites his readers to visit farms and factories in order to satisfy themselves of the realism of his theory; second, speaking of the economic relations between classes he tells us: *La marche de ce commerce entre les différentes classes et ses conditions essentielles ne sont point hypothétiques. Quiconque voudra réfléchir, verra qu'ils sont fidèlement copiés d'après la nature.*



economics— consists primarily in bringing out the fact that the fundamental problem of that theory is a maximum problem. The importance of the hedonist garb in which Quesnay presented it consists in the fact that, considering dates, it gives him a prominent place in the history of utilitarian social philosophy: he certainly was one of the founding fathers of utilitarianism though he did not state the greatest-happiness principle in so many words.

But he also is the most important of all the founding fathers of the doctrine that will henceforth be referred to as the Maximum Doctrine of Perfect Competition (see A.Marshall, *Principles*, p. 531). That is to say, he held that maximum satisfaction of wants for all members of society, taken together, will result if, conditions of perfect competition prevailing, everyone be allowed to act freely upon his own individual self-interest. This doctrine was taught throughout the nineteenth century, unconditionally or with some qualification, by most nonsocialist theorists of standing, including many who refused to accept the utilitarian philosophy: serious, though at first very cautious, criticism really starts with A.Marshall. All the more necessary is it to point out how weak its foundations were from the first. The doctrine is of course never strictly true under any circumstances. But, for certain historical environments, a case can be made out for it under assumptions that are restrictive indeed, but not so restrictive as to deprive it entirely of practical value. The point to which I wish to call the reader's attention is, however, that Quesnay did not make any attempt to prove it. It did not seem to him to stand in need of explicit proof. He manifestly thought that if every individual strives to realize maximum satisfaction, then all individuals will 'of course' achieve maximum satisfaction. The fact that one of the best brains of our science could have been content with such an obvious non sequitur is indeed food for thought: low standards of rigor and sloppiness of thinking have been worse enemies of scientific economics than has been political bias.

Observe, however, that the physiocrat slogan— 'the interests of individuals are the servants of the public interest' — is not per se open to our objection. It may mean no more than that, as A.Smith was to put it, we owe our bread not to the benevolence of the baker but to his self-interest, a pedestrian truth which it is worth while to repeat again and again in view of the ineradicable prejudice that every action intended to serve the profit interest must be antisocial by virtue of this fact alone. A.Smith was careful not to build too much on this. In particular, he was keenly aware of the antagonism between social classes. But Quesnay went on, from asserting universal compatibility— or, indeed, complementarity— of individual interests in competitive society, to asserting universal harmony of class interests, which makes him the forerunner of nineteenth-century Harmonism (Say, Carey, Bastiat). In this case, however, we have an attempt at proof: the *tableau économique* shows how every class, as it were, lives upon every other class, and in particular how the prosperity of the landowners conditions the prosperity of the other classes. The proof— which hails from Cantillon— is open to obvious objections and even to ridicule, but nevertheless Quesnay's harmonism does not simply hang in the air. Nor is it necessary to appeal to belief in providential ordinance in order to explain it.

II. Quesnay possessed a very comprehensive analytic schema, though he presented it by means of disconnected sketches. Some parts of it, especially those concerning population, wages, interest, and money, will come in for notice in subsequent chapters. In order not to leave the present picture incomplete, however, I shall indicate his positions

on these subjects: his theory of population anticipated that of Malthus in all essentials; his theory of wages centered in a minimum-of-existence proposition; his theory of interest may be said to be almost nonexistent and he entirely failed to account for the phenomenon; his theory of money, unlike Cantillon's, was what we have decided to label cartalist.

Barter and pricing he analyzed on strictly 'subjective' lines—basing his theory resolutely upon the fact of consumers' wants. This is of some importance—though he added nothing to the price theory of the late scholastics—because his treatment of the problem (like Condillac's) must be counted among the influences that kept this theory alive in France: it points directly to J.B. Say. There is, however, another point to be recorded in this connection. A. Marshall may have been right in denying that the theory of consumption is the scientific basis of economics. But it was certainly the basis of Quesnay's economics. 'Liberal' economists of the nineteenth century were in the habit of commending eighteenth-century free traders, especially A. Smith, for having duly emphasized the truth that consumption is the 'sole end and purpose of production' and for having thereby abolished one of the 'errors of mercantilism.' There is very little to this: the truth, so far as it is a truth, is trivial and the error is largely imaginary. However, Quesnay also attended to consumption in a different sense that would have been very little to the taste of those 'liberal' economists and is, if anything, suggestive of 'mercantilist' lines of thought:<sup>5</sup> unlike Turgot and A. Smith, he made it an explicit condition for the economic process to function smoothly *that everybody should promptly spend his net receipts upon consumers' goods* or, to use a phrase that has gained currency in Washington in the last years, that everybody should 'utilize' his income fully. If this were not done, he thought, and especially if some people saved *in order to increase their individual stocks of money*, all classes would decay and total output would shrink, since anybody's refusal to spend necessarily destroys somebody else's income. This 'Keynesian' aspect of Quesnay's teaching will be considered later.

III. Particularly significant as a creative contribution was Quesnay's theory of capital. Cantillon and other precursors notwithstanding, he may be said to have laid the foundations of this part of economic theory. The performance is an interesting illustration of the way in which, in the mind of the born theorist, *analytic generalization may grow out of observation induced by preoccupation with practical problems*. Quesnay's agricultural program, which to him was practically equivalent to the sum total of

<sup>5</sup> Quesnay's free-trade recommendations are, of course, responsible for the tradition that put him into a position of uncompromising hostility to 'mercantilist' doctrine. We have seen, indeed, that even in those recommendations there is an element that distinguishes his free trade from the free trade of the nineteenth-century 'liberals'; viz., the emphasis upon the *bon prix*, the high price, of agricultural products. But in itself this might be interpreted as an insertion, for reasons of political preference, of a practical consideration into a doctrinal structure to which it was theoretically extraneous. Looking more closely, however, we discover that there was more than that to the *bon prix*. Unlike A. Smith, who carried the cheapness-and-plenty doctrine to victory (and therefore was, if we adopt Lord Keynes's view, a victim of the 'fallacy of cheapness'), Quesnay sponsored, *as a matter of analytic principle*, the dearness-and-plenty view (see below, ch. 6, sec. 1). And this, taken together with the point to which I am about to call attention in the text, makes him a brother in spirit, as far as analysis and not policy is concerned, of writers that are usually classed as 'mercantilists' and distances him from the nineteenth-century writers who were to follow A. Smith and from A. Smith himself, at least in one very important respect.

economic policy, was geared to the needs of fairly large-scale farming: like Cantillon, he never considered seriously any agrarian world other than one that turned on, and was propelled by, the enterprise of an intelligent and active farming class in full possession of all the technological and commercial opportunities of its time. These intelligent farmers he did not visualize as owners of their land, but as free from all interference from landlords, from whom they would rent, for long periods, large lots of land—cleared and equipped with buildings—in order to do with them as they pleased. Commons should be dissolved and let to individuals like the rest of the land; feudal rights and duties—in particular the right to hunt on farm land—should be abolished; so should internal and external customs that hamper disposal of products, and taxes that discourage effort (one of the practical reasons for the single tax that was to be paid by the landlord); the countryside, as it were, was to dissolve into a swarm of prosperous enterprises, left to their own devices, selling at high prices, buzzing with energy themselves, and energizing the whole of the national economy.<sup>6</sup>

Now, if the reader visualizes this particular type of program, he will immediately see that its success presupposed fulfilment of three conditions: first, that these farmer-entrepreneurs should actually buzz with energy, a condition that Quesnay took lightly because, being a typical child of his age, he did not attach much importance to the problem of innate qualities of personnel; second, that this farmer's paradise should not be undersold from abroad, a condition about which, in eighteenth-century France, it was not necessary to worry; and third, that there should be plenty of capital—cheap capital—available for these essentially capitalist farmer-entrepreneurs. Quesnay did worry about this last condition. He had every reason for doing so, because his realistic studies, which went into all the details of the technology and business policy of farming, had given him a true idea of what the capital requirements of this kind of farming actually are. And it was from these investigations that, conceptualizing his findings, he developed his theory of capital. The immediate result is embodied in his classification of the farmer's capital requirements into *avances foncières*, initial expenditures on clearing, draining, fencing, building, and the like that do not recur at all or recur only in long periods, *avances primitives*, expenditures on equipment including cattle and horses and the *avances annuelles*, the current expenditures on seed, labor, and the like.<sup>7</sup>

Quesnay did not bother much about generalizing these concepts: their extension to include industry does not present any difficulty. But what do these *avances* consist in? It is no doubt the drainage, buildings, oxen, ploughs, seed and labor, and the like, that the farmer needs. A stock of goods and services, then? But if so, what are we to do with the facts that 'capital required' or 'capital invested' is, at the very least, *expressed* in terms of money, and that, as a matter of fact, it is also *bought* for money, which is really what landlord (for the *avances foncières*) and farmer need in the first instance? Quesnay ran up

<sup>6</sup> By way of supplementing what has already been said about the common sense of much of Quesnay's economic philosophy, it may be observed that a policy of this kind seems indeed a more reasonable thing to recommend, in the domestic and international situation of France around 1750 or 1760, than throwing away means on colonial ventures which, even if successful, would only provide prizes for the English fleet, or on financial enterprise that might end as John Law's had ended, or on military establishments that might produce another Rossbach. This psychology of the thoroughly disappointed nation that Quesnay was addressing must be understood.

<sup>7</sup> There are in addition the *avances souveraines*, public expenditure on roads, et cetera.

against all the problems that lurk behind these questions, and his rudimentary attempts at solving them may have been—even if they were not actually, for it is impossible to be certain about this—the starting points of all further work upon them. We shall discuss below the reasons that have been adduced for believing that A. Smith's capital theory grew out of critical absorption of Quesnay's, which would in fact make the latter the ancestor of practically all the capital theories down to J.S. Mill's. And since the man who first tackles a subject will often throw out all sorts of suggestions that point in many more directions than he himself is aware of, we might even be tempted to trace back to Quesnay such later developments as are associated with the names of Walras and Irving Fisher, on the one hand, and of Jevons and Böhm-Bawerk, on the other. This, however, is hardly permissible, for the logical possibility of doing so simply results from the rich and indefinite possibilities—of truth as well as of error—that are enshrined in the word *avances*. Of course, no writer on economic subjects can ever have doubted the simple fact that what 'capitalists' do is to provide either goods or money with which to start and carry on production; and 'capitalists' themselves always knew that what they were doing was to 'advance' money for these purposes. But one of the fundamental types of analytic achievement precisely consists in raising some simple fact (for example, that apples, severed from the branches of the apple tree, will fall to the ground) *into the light of theoretical consciousness*. This is what Quesnay's contribution to capital theory consists in: impressed by the fact that his farmer-entrepreneurs could not start upon their careers unless they were provided with all sorts of things *beforehand*, he introduced capital into economic theory as wealth accumulated previous to starting the production under consideration. But more than this he did not do, and widely divergent paths may open out from this starting point. In particular, he did not analyze the formation and behavior of money capital as a thing distinct from 'real' capital—a thing, moreover, that plays tricks of its own. And he accepted the Janus-face of nonmonetary capital, which is value on one side (*valeurs accumulées*) and physical goods on the other, without straightening out the problems involved, particularly that of the carrying charges which enter the value concept but do not enter the physical one.

IV. The third chapter of Book II of Marshall's *Principles* opens with the sentence, 'Man cannot create material things.' This statement hails from J.S. Mill and Rae and many earlier writers. Since economics is concerned with the 'creation' or production of either utilities or market values, it is difficult to see the relevance of such a statement, of which, in fact, none of those writers ever made any use. But, as everyone knows, the physiocrats did put it to analytic use: following Cantillon they derived from it their theory of the *produit net*. This is the only reason why the subject crosses our path again. For neither their statement of what they believed to be a physical fact nor the philosophies in which they indulged in connection with it are in themselves worth our while to discuss. Nor would there be anything particularly interesting in Quesnay's terminological decision to call, on the strength of that fact, agricultural activity 'productive' (the farmer's activity, not that of the farm laborer) and every other activity 'sterile' (which, of course, does not mean useless), though it is precisely this which was felt to be odd and attracted an undue amount of critical attention. Let us, however, observe that it is really not so very odd to look upon an economy as an engine that is fed materials drawn from the womb of nature and that simply works up these materials without adding to them: the only question that



arises is whether or not the analogy is useful. After what has been said on the subject in our survey of Cantillon's work, we can dispose of it quickly.

We have seen in that survey that the theory of Cantillon's *produit de la terre*—and Quesnay's *produit net* is the same thing—is a method, though certainly not the most correct or convenient one, of expressing the fact that the rent of land is, or contains, a net return. But, as we have also seen, the theory goes further than this. It holds that the rent of land is the only net return in existence, and that it is coextensive with the whole of society's disposable net income, all other returns being balanced by cost items in the sense that they are not more than sufficient to replace what production uses up. The workman gets no more than is necessary to reproduce his ability to work. The capitalist, taking account of risks, gets no more than is necessary to replace his stock and *his* ability to work: labor, management, and capital are 'sterile' in the sense that, though they produce utilities, they do not produce any Surplus Value.

In general conception this theory bears a striking similarity to that of Marx. Exactly as Quesnay let land alone be productive of surplus value, so Marx let labor alone be productive of surplus value. Neither construction allows any productivity to capital—meaning plant, equipment, and material—which is indeed a conductor or embodiment of a surplus value created, respectively, by land or labor but does not add to it. So far Marx's theory looks as if it were the result of switching Quesnay's schema from one of Petty's two original factors of production to the other. There seems, however, to be a fundamental difference between the two. Marx's way of carrying out his postulate of productivity's being inherent in labor alone is, as we shall see, open to objection. But, with him, labor's productivity is from the first a value productivity, and he attempted to show, on the basis of his law of values, how surplus value emerges from the mechanism of competitive markets. Quesnay made no such attempt. His starting point was physical productivity, that is, 'creation' of stuff and not of values. He took it for granted that the fact of physical productivity implied value productivity, and he shifted in midstream from the one to the other. On the face of it, this seems to be a definite error of which Marx was not guilty. But we have seen above that, by means of suitable assumptions, it is nevertheless possible to make the proposition that the rent of land is the only net return formally valid. And this means in turn that if we grant these assumptions—which are, after all, not much worse than those which it is necessary to grant in order to validate the labor theory of value—it is possible to transpose Quesnay's irrelevant argument from physical productivity into a relevant one from value productivity: the scarce natural agent, by hypothesis operating in agriculture alone, produces a value surplus over the other factors there employed, and manufacture adds nothing to it because competition will reduce what it does add to the value of the materials to the level of the value of the agrarian products that the manufacturers and their workmen consume. If we be grimly resolved to go through with this argument, even interest could be explained as a derivate of the *produit net*. This would complete the analogy with Marx.

#### (d) *The Tableau Économique.*

The analytic structure we have been surveying is logically quite complete, and he who knows how to piece it together—which Quesnay did not do—will not miss any of the essentials that go into a comprehensive treatise on pure and applied economics. The over-

all description of a stationary economic process which Quesnay embodied in his *tableau* is not, as his pupils and practically all critics believed, the centerpiece of that structure but an addition to it that is separable from the rest—painted, as it were, on a separate canvas—and therefore can be dealt with separately. What it depicts is the flow of expenditures and products between social classes, which here become the actors in the economic play—which they are not in the rest of Quesnay's work.

Economists, of course, always had some schema of the class structure of society at the back of their minds. Cantillon seems, however, to have been the first to construct such a schema explicitly and to use it as a tool of analysis. This schema was adopted by Quesnay. Accordingly, he distinguished landowners (*classe des propriétaires*, or *classe souveraine* or, what is significant, *classe distributive*), farmers (*classe productive*), and all the people engaged in nonagricultural pursuits, roughly equivalent to the bourgeoisie (*classe stérile*). Labor may either be treated as a fourth class or added in proper proportions to the second and third. The latter seems preferable in order to bring out the nature of the schema, which is not so much a schema of classes as sociological entities, but of economic groups of the kind we meet in the familiar statistics of people 'attached' to, say, agriculture or mining or manufacturing industries. In any case, however, labor plays an entirely 'passive' role with him exactly as it did with Cantillon. The flow of expenditures and products, then, is between a 'farmer basin,' a 'landowner basin,' and a 'sterile-class basin.' It is not necessary to reproduce Quesnay's picture of it or to enter into its details.<sup>8</sup> All the reader needs to retain is this.

Suppose that in the unit period  $t-1$  the landowners have received and accumulated in many instalments the rent due them by the farmers, so that, at the beginning of period  $t$ , they hold in cash all the net national income (in Quesnay's sense) while everybody else stands ready to sell and to produce. We are to follow the meanderings of that rent or net income through the economy. Let its amount be 1000 units of money. The landowners, so we will further assume, spend 500 of this on farm products and 500 on manufactures, the products of the sterile class, that is, the class that does not produce surplus value. The 500 units that the farmers get back in this way (for these units came out of their payments in  $t-1$ ) are first of all doubled in their hands in consequence of their surplus value-producing activity so that they swell up to 1000. Half of this then goes to the landlords for rent (not to be spent until period  $t+1$ ), one quarter is 'consumed' within the agrarian sector, the last quarter goes to the 'steriles' in payment of manufactures for the farmers' use. The 'steriles' do not add any value but only reproduce it. Of the 500 they received from the

<sup>8</sup> As already stated, the *Tableau économique* ('picture' would render the meaning better than does the more usual 'table') was first printed in Versailles, 1758, with much pomp and circumstance—Louis XV himself, so we are told, correcting the proofs. This original, lost for over a hundred years, was recovered and reproduced in facsimile for the British Economic Society (as the Royal Economic Society then was called) in 1895 with a valuable introduction by H. Higgs, and has been repeatedly reprinted since. But Quesnay himself published another simplified version in the *Analyse* (see *Oeuvres*), which Dupont used in his *Physiocratie*. The reader finds a translation of Quesnay's commentary in A. E. Monroe's *Early Economic Thought*. Mirabeau, in the sixth Part of *L'Ami* presented a version of his own. There are thus at least two *tableaux* (disregarding variants that differ but little), which not only use different figures but also differ somewhat in theoretically relevant features. We shall not, however, go into these matters. The best way to get the essential idea with a minimum of trouble is to look up the excellent presentation by Shigeto Tsuru in Appendix A to P. M. Sweezy's *Theory of Capitalist Development* (1942).

landlords, 250 units are absorbed by their and their workmen's consumption of their own products. For the other 250 they buy food and raw material from farmers in whose hands these 250 again swell up to 500. And the same happens with the 250 and any later amounts they get from farmers. Whatever the farmers receive is always doubled and used for payment of rent to the landlords to be spent in period  $t+1$  for consumption in the agrarian sector and for further purchases from the 'steriles.' It will be readily seen that, if the length of the unit period be properly chosen, we shall find at the end of it that the 1000 units of net income are back again in the hands of the landowners, who will, at the beginning of period  $t+1$ , spend them and so start the whole process again. The reader will realize that all this, apart from the pictorial form, amounts to no more than a development in fuller detail of Cantillon's schema.<sup>9</sup> But what is the use of this picture, and what is the nature of the analytic achievement it embodies?

It should be observed at the outset that so far as the idea of such a schema is concerned the specifically physiocrat features in the Cantillon-Quesnay *tableau* are irrelevant. Having dealt with these already, we are therefore no longer interested in the central position Cantillon and Quesnay assigned to landowners and their expenditure: we could just as well start from one of the two other 'basins.' Nor are we any longer interested in what was of primary importance to Quesnay, namely the principle that every sum that goes to farmers increases (doubles) in their hands and that sums that go to manufacturers do not. Every analyst can arrange these points so as to suit his theoretical set-up. What we are now interested in is the *tableau* idea considered as a tool, the *tableau* method itself. Three aspects of it call particularly for attention.

First of all, the *tableau* method achieves a tremendous simplification. Actually the economic life of a nonsocialist society consists of millions of relations or flows between individual firms and households. We can establish certain theorems about them, but we can never observe all of them. But if we replace them by relations between classes or by flows of class (or other) aggregates, the unmanageable number of variables in the economic problem suddenly reduces to a few which are easy to handle and follow up. Reserving this aspect for later discussion, we take the opportunity of noticing a cognate though different point. A glance at the *tableau* suggests the idea of a Social Product or Total Output that is produced in one series of steps and 'distributed' in another. We are so familiar with this idea that we rarely if ever realize how very unrealistic an abstraction it is. Production and distribution are indeed different processes in a socialist society.

<sup>9</sup> The question how 'credit' should be distributed between Cantillon and Quesnay is both difficult and, from the standpoint of the sociology of scientific invention and scientific success, interesting. Cantillon no doubt felt the scientific need for some such tool, had the idea of how to construct one, and actually pointed the way toward doing so. If one of these three criteria for attributing inventions to individuals had been absent, the case would be much easier to deal with: as it is, Cantillon did for the *tableau* method what both Newcomen and Watt did for the steam engine. Yet I frankly confess to a reluctance toward attributing to Quesnay no more than the merit of sharpening Cantillon's concepts and putting results into the *tableau* form which puzzled and attracted. Such deep understanding and wholehearted absorption of another man's work is rare unless it is propelled by original perception of the same thing. Moreover, as will presently be pointed out in the text, an essential part of the achievement was the circuit-flow idea. It is tempting to assume that this idea came independently to Quesnay, the physician, through analogy with the circulation of the blood in the human body. William Harvey's (1578-1657) discovery of the latter was then a century old but had lost nothing of its freshness (*Exercitatio anatomica de motu cordis et sanguinis*, 1628).

But in capitalist society they are but different aspects of one and the same process: the bulk of capitalist incomes is formed in the course of the transactions that constitute production in the economic, as distinguished from the technological, sense. Nevertheless, the realistic idea of income formation—the realistic virtue of which moreover does not carry any disadvantage that might justify its neglect—has come to the fore only sporadically.<sup>10</sup> With the French economists, the physiocrat idea of distribution prevailed throughout and the same holds true of English economists who adopted it, perhaps, under the influence of J.B.Say, at the beginning of the nineteenth century. The concept of total annual output and its value (*valeur de la reproduction annuelle*) has, of course, its uses independently of this. It was adopted by A.Smith.

Second, the simplification of the analytic pattern achieved by the *tableau* method opens up great possibilities for numerical theory. Quesnay was more alive to these possibilities than had been Cantillon and, in this particular respect, he carried the latter's work much further. He troubled himself about statistical data and actually tried to estimate the values of annual output and other aggregates. That is to say, he did genuinely econometric work. This aspect, too, has acquired new actuality in our time through the great work of Leontief,<sup>11</sup> which, entirely different though it is from Quesnay's in purpose and technique, nevertheless revived the fundamental principle of the *tableau* method. Marx, who stands between the two, did not attempt to make his schema statistically operative.<sup>12</sup>

Third and most important, the Cantillon-Quesnay *tableau* was the first method ever devised in order to convey an *explicit* conception of the nature of economic equilibrium. It would seem impossible to exaggerate the importance of this achievement if admiring disciples had not actually succeeded in doing so. Economics, like every other science, started with the investigation of 'local' relations between two or more economic quantities, such as the relation between the price of a commodity and the quantity of it that is available in a market; in other words, it starts with Partial Analysis (see below, Part IV, ch. 7, sec. 6). Disconnected efforts of this type were directed toward points that happen to be of some practical interest or to attract our curiosity for other reasons. It was but slowly that the fact began to dawn upon analysts that there is a pervading interdependence between all economic phenomena, that they all hang together somehow. We have seen that the best of the seventeenth-century Discourses of Trade, such as Child's or Pollexfen's or, still more, the writings of Davenant, display unmistakable symptoms of a growing awareness of this. But they never bothered to investigate *how* things hang together. They took it for granted and either were unable to raise this interdependence to the plane of explicit formulation or did not see the necessity for doing so. They were very far from realizing that this all-pervading interdependence is the fundamental fact, the analysis of which is the chief source of the additions that the specifically scientific attitude has to make to the practical man's knowledge of economic phenomena; and that the most fundamental of all specifically scientific questions is the question whether analysis of that interdependence will yield relations sufficient to determine—if possible, uniquely—all the prices and quantities of products and

<sup>10</sup> The first to urge the case for income formation vs. distribution was, I believe, E.von Philippovich (in the later editions of his textbook, *Grundriss der politischen Oekonomie*, 1st ed., 1893–1907).

<sup>11</sup> Wassily W.Leontief, *The Structure of the American Economy* (1941; new rev. ed., 1951).

<sup>12</sup> On Marx's reproduction schema see P.M.Sweezy, *op. cit.* Appendix A.



productive services that constitute the economic 'system.' I have said on a previous occasion that the first discovery of a science is the discovery of itself. But this does not spell discovery of its fundamental problem. That comes much later. In the case of economics, it came particularly late. The scholastics had an inkling of it. The seventeenth-century businessmen-economists came nearer to it. Isnard, A. Smith, J.B. Say, Ricardo, and others all struggled or rather fumbled for it, every one of them in his own way. But the discovery was not fully made until Walras, whose system of equations, defining (static) equilibrium in a system of interdependent quantities, is the Magna Carta of economic theory—the technical imperfections of that monument of constitutional law being an essential part of the analogy (see below, Part IV, ch. 7, sec. 7). The history of economic analysis or, at any rate, of its 'pure' kernel, from Child to Walras might be written in terms of this conception's gradual emergence into the light of consciousness.

Now Cantillon and Quesnay had this conception of the general interdependence of all sectors and all elements of the economic process in which—so Dupont actually put it—nothing stands alone and all things hang together.

And their distinctive merit—shared, to some extent, by Boisguillebert—was that, without realizing the possibilities of the method later on adumbrated by Isnard, they made that conception explicit in a way of their own, namely, by the *tableau* method: while the idea of representing the pure logic of the economic process by a system of simultaneous equations was quite outside their range of vision, they represented it by a picture. In a sense, this method was primitive and lacking in rigor—which is, in fact, why it fell out of the running and why analysis historically developed on the other line. But in one respect it was superior to the logically more satisfactory method; it visualized the (stationary) economic process as a circuit flow that in each period returns upon itself. This is not only a method of conveying the fact that the economic process is logically self-contained, a distinct thing that is complete in itself, but it is also a method of conveying features of it—definite sequences in particular—that do not stand out equally well in a system of simultaneous equations. Of course, there is also the simplification of the theory of general equilibrium adverted to already: Quesnay identified general equilibrium, that is, equilibrium in the economy as a whole in distinction to the equilibrium in any particular small sector of it, with the equilibrium of social aggregates—exactly as do the modern Keynesians.<sup>13</sup>

#### 4. TURGOT

Although Turgot was no econometrician, his great name has been assigned this place in our gallery because he is so often classed with the physiocrats, though mostly with qualifications. At first sight, this seems reasonable enough, for his main work abounds in passages that are evidently intended to emphasize allegiance to specifically physiocrat tenets. We read that land is the *only* source of *richesses*; that the *cultivateur* produces not only his own compensation but also the income that serves to remunerate the class of

<sup>13</sup> See in particular Joan Robinson, 'The Theory of Money and the Analysis of Output,' *Review of Economic Studies*, October 1933.

artisans and other *stipendiés*; that the farmer's activity is the prime mover of the social engine, whereas the manufacturer's only transforms; that the farmer supports and feeds all other classes; and so on. But, if we look more closely, we make a surprising discovery. Those passages are then seen to be strangers to the argument into which they are inserted. We can suppress them without affecting the rest. In fact, the rest gains in consistency thereby. Therefore, if we adhere to a principle that is uniformly applied in this book to the interpretation of such professions of faith, namely, the principle of relevance to analytic procedure and results, we have no choice but to neglect those passages. What are we to think of this? First of all, commonly accepted rules of criticism would lead us to suspect those passages if we were dealing with an ancient text. And it so happens that in this particular case such distrust is not completely unwarranted. For we know that there was a not quite amicable discussion between Dupont and Turgot on the subject of the publication of the latter's manuscript, and we do not know exactly what the result was. However, I will waive this point. But quite independently of it, there is, considering what we know of Turgot's generous character, no difficulty in understanding why, writing for publication at that particular time, he should have gone out of his way to pay respect to a group with which he agreed on many points of scientific economics—from which he had, perhaps, learned a good deal, for example, in matters of capital theory—and with which he agreed wholeheartedly on all the immediately practical points of economic policy, though he disagreed with them on some points of their political philosophy. According to this hypothesis, which puts him, morally, high above all those who emphasize points of difference in order to distance themselves from fellow workers to whom they owe obligation, he should not be classified as a physiocrat with reservations, but as a nonphysiocrat with physiocrat sympathies. This seems, in fact, to meet the case.

We went to the trouble of disentangling Turgot from the physiocrats not only in order to make his figure stand upon its own pedestal, as it should, but also in order to put this pedestal into the right place. For more closely than with the physiocrats was he associated with another group, if 'group' is the word for a very loose connection that was no school in the proper sense of the term. It centered in a strong and influential man, who was no doctrinaire, however, and no exponent of any 'system'—Gournay.<sup>1</sup> This fact throws

<sup>1</sup> Jacques C.M. Vincent de Gournay (1712–59) was a bourgeois businessman (the 'de Gournay' came from an estate that was left to him by a business connection) who later in life made himself a public servant by the purchase of the office of intendant of commerce. He was an altogether superior sort of person of a type that is rare outside England. But his great services to economics are by no means easy to characterize. They are not embodied in publications (he wrote reports, though, and also notes to translations of English economic works). Nor are his letters and various utterances (one of which has become famous: *laissez faire, laissez passer* has been attributed to him) adequate to convey what he means to the history of our science. We know pretty well his role in shaping opinion on economic policy by exerting formative influence upon some of the best minds of the age, and we also know in a general way what it was he advocated: relaxation of the fetters of public control, moderate protection, and that sort of thing. But we can only *sense*, or reconstruct from a few indications, the formative influence upon analytic work. He appointed himself, as it were, tutor to his friends, whom he knew how to choose and, like a good tutor, he effaced himself in order to give stimulating pointers to other people's teaching. His two provable claims to our gratitude are his successful propaganda for Cantillon's work and his contribution to Turgot's education as an economist. But below these two peak achievements there must have been broader middle ranges. In the highest sense of the word Teacher, this man who never taught in the

technical sense may have been one of the greatest teachers of economics that ever lived. Therefore it seems that the traditional place that practically every textbook on the history of economics or economic thought accords to him is well merited, however slender the direct evidence that justifies it. The whole literature on physiocracy deals with him. G.Schelle's *Vincent de Gournay* (1897) is still the standard work. See also Turgot's '*Éloge de Vincent de Gournay*' in the latter's *Oeuvres*, and A.Oncken's *Die Maxime: Laissez faire et laissez passer...* (1886).

much light on Turgot's background as an economist. Gournay had traveled extensively and was an intelligent observer of English developments. Much of what we know about his views has a distinctly English flavor. And among his writings are several translations, in particular one of Child's *New Discourse*. Turgot was his personal friend and was also interested in the works of English economists, especially Hume and Josiah Tucker, whom he translated. If the obvious inference may be trusted, we have here an instance of the way in which not only political but also scientific ideas crossed and recrossed the Channel. The possible filiation Child-Hume-Turgot is particularly interesting—still more so in case we have to add the name of A.Smith after that of Turgot.<sup>2</sup> In the French part of his background, the most important figure is Cantillon.

Turgot's brilliant achievements, his unchallenged place in the history of our science, and his evident title to membership in the triumvirate in which Beccaria and A.Smith are his colleagues are sufficient reasons why it is desirable to look for a moment at the man and his career. Anne Robert Jacques Turgot, Baron de l'Aulne (1727–81; referred to, by his contemporaries, as M.de Turgot; before 1750, he was known as Abbé de Brucourt), came from a Norman family that was of old, if not high, nobility and fairly well to do, if not rich. The sociological type is rendered by the English word 'gentry' and by the German word 'Junker.' He was, as a third son, educated for the Church, and this clerical education, which gave full scope to his brilliant and precocious gifts, ought to receive recognition, though it usually does not, in an enumeration of the factors that made for his achievements. He emerged full of great plans and master of wide horizons (scientifically and otherwise) as an abbé at the Sorbonne, where he became quite a figure, writing, discussing, experiencing the second formative influence of his youth, that of the 'secte encyclopédiste,' though he very soon moved away from it. Then he exchanged the career of churchman for the civil service, and a civil servant he remained for the rest of his active life. The bureaucracies of all times and countries may be proud of him, for not only was he an ornament of the French bureaucracy of the *ancien régime*, but this bureaucracy also was the third of the environmental influences that helped to form him. He was a great success as *intendant* (general administrator) of the district (*généralité*) of Limoges, 1761–74, where his zeal, resourcefulness, and public spirit showed up to best advantage. On the strength of this success he was appointed, in 1774, Minister of the Navy and, a few months later, *Contrôleur Général des*

<sup>2</sup> See below. ch. 6. sec. 6.

*Finances* (which means Minister of Finance and Commerce and Commissioner of Public Works), a position he held for twenty months, much of the time tortured by gout. After his fall, he lived in retirement until his death.

Except for the just pride we economists may take in so brilliant a fellow worker, the main importance of this career for a history of economic analysis is that it explains why Turgot's scientific work did not come to full fruition. Biographers and historians of economic thought, however, have always allocated most of their space to his exploits as a minister of finance and, in dealing with them, have propagated two sagas that have a bearing upon the sociology of our science and must therefore be briefly noticed. Before doing so I wish, however, to disclaim any intention of 'debunking' the fame of one of the none too numerous significant figures of which the history of economics can boast: it goes without saying that nobody would think of writing a volume on Great Ministers of Finance without including Turgot. The first of those sagas might be entitled: 'The Economist in Action.' It depicts the man who, from scientific analysis, derives recipes for curing the ills of the state and, on attaining power, rushes to carry them into effect. There is nothing whatever in this. Turgot was, first and last, a great civil servant, who looked upon state and society with the eyes of a civil servant. So, when he attained cabinet office—'power' would be a misleading term to use—he set about to improve the financial administration and the all but desperate situation of the royal finances. In both these respects he succeeded remarkably—in fact almost unbelievably—well, and these were his main achievements. He also established, by royal decree, internal free trade in grains and—the only other measure relevant for us—abolished the *jurandes*, the craft guilds. These and some minor measures were not successes in the political sense mainly because of his failure to consider tactical aspects: they immediately elicited violent resistance, the one concerning the grain trade through a piece of bad luck—its coincidence with a bad harvest. The point to be observed is, however, that nothing Turgot actually did or showed any intention of doing has any particular relation to any doctrine, scientific or other. It was all in the line of an unusually able civil servant who perceived the currents of his time and tried to serve them in a practical spirit. He was so little given to obeying abstract principles—which of course is all to his credit—that, in one instance, he actually introduced a protective duty, and, in another, embarked upon state enterprise (in the chemical industry). The physiocrats applauded him, of course, and made propaganda for him, but they had little to do with his policies and nothing to do with his advent to office, for in 1774 they were in no position to exert any influence. By the same token, his fall was not a defeat of any doctrine that was specifically their own.

The other saga derives from the saga of the French Revolution. Since most of the writers on Turgot were and are in sympathy with the latter,



they were and are inevitably driven to exalting into ‘heroes that fought for the light in the darkness of despotism’ a chosen few of the servants of the *ancien régime*. Turgot is the chief beneficiary of this tradition that was initiated by the revolutionaries themselves, who, even officially, sometimes referred to Turgot as *ce bon citoyen*. And some writers have added the touch that Turgot was raised to office by the voice of the people and dismissed at the behest of an intriguing court. As a matter of fact, Turgot was appointed *Contrôleur* by a thoroughly well-meaning monarch who looked around among his bureaucrats for the best man for the job. If there was any other influence, it was that of the Minister de Maurepas. As soon as he was in office Turgot, no doubt with the most meritorious intentions, began to lean heavily on the royal prerogative. Now it is very easy, when a minister is supported by a monarch, to draw up excellent decrees and to force them down the throats of *parlements* who refuse to register them. The difficulty, since government is carried on among living people and groups, is to make those decrees accepted. Louis XVI at first lent his wholehearted support, but the trouble with him, who had many good qualities, was precisely that he was no despot and quite unwilling to use force. And though Turgot was also the target of court and other intrigues—of the former, mainly owing to his policy of retrenchment—it was the popular resistance of the rural proletariat and of craft guilds that became after a time the dominant factor of the situation: there were even local revolts which Turgot suppressed with a firm hand. It would not be true either, but it would be nearer the truth than is the opposite, to say that Turgot was raised to ministerial office by the king and overthrown by the people. For our purpose, the relevance of this is in the light it sheds on the personality of one of the greatest scientific economists of all times. The interpretation submitted makes the king come off better than does the usual one but, what alone matters here, it does not make Turgot come off worse. It only makes him come off differently. We see the excellent civil servant who is a good administrator and (perhaps) adviser but no leader or tactician. We also see honesty and firmness (quite as much as do other interpreters) and (what does not, perhaps, impress these other interpreters quite as much) loyalty to his king. The answer to the academic question that has been raised, whether or not, had he stayed in office, he might have prevented the Revolution, depends on what we mean by revolution. If we mean the overthrow of the monarchy and the sanguinary excesses, the answer should be in the affirmative: no more, however, because of the reforms he might have carried in that case than because of his willingness to call out the troops. No cap of liberty will fit Turgot.

His chief work, the *Réflexions sur la formation et la distribution des richesses*, was written for the benefit of two Chinese students in 1766, and published (as has been stated above, not without some friction that arose from Dupont’s attempts at editorial interference, presumably made in the interest of physiocrat orthodoxy) in the *Éphémérides* (1769–70; English trans. 1898). Of minor publications that usefully

supplement this work, the most important are the *Éloge de Gournay*, the letter on paper money to the Abbé de Cicé (his first economic publication, 1749), the *observations* on the essays by St.-Péray (1767) and Graslin (1767) on indirect taxation, and a paper on loans of money (1769). His contributions to the *Encyclopédie*, including such topics as 'existence,' 'expansibility,' and 'etymology,' and his criticism of Berkeley's philosophy—and many others—are interesting as so many proofs of the breadth of his range. The *Oeuvres* of Turgot were edited by Dupont de Nemours (1808–11) and again by G.Schelle (1913–23), the latter edition being the one to use. Léon Say's *Turgot* has been translated into English by M.B.Anderson (1888). Also see Alfred Neymarck, *Turgot...* (1885); S.Feibogen, *Smith und Turgot* (1892); W.W. Stephens, *The Life and Writings of Turgot* (1895); and especially G.Schelle, *Turgot* (1909).

If we now try to compare Turgot's scientific personality with those of Beccaria and A.Smith, significant similarities strike us first: all three were polyhistoric in learning and range of vision; all three stood outside the arena of business and political pursuits; all three displayed single-minded devotion to the duty in hand. Turgot was undoubtedly the most brilliant of the three, though his brilliance was somewhat tinged with superficiality, not in economics, but in his outlying intellectual domains. The main difference, from the standpoint of their scientific achievement, is that A.Smith expended very little of his energies on nonscientific work, Beccaria very much, and Turgot, from 1761 on, almost all he had. During the thirteen years at Limoges, Turgot can have had but scanty leisure; during his (nearly) two years of ministerial office, practically none: his creative work must have been done between the ages of 18 and 34. And this explains all there is to explain, not indeed about the comparative merits of the three works in question, but about the different degrees to which they were finished works at all.

Turgot was much too able a man to write anything insignificant. Nevertheless, only the Turgot specialist needs to go beyond the *Réflexions*, and with one exception we shall confine ourselves to this. The slender work was evidently written in hot haste and never thoroughly revised. It looks as Marshall's *Principles* would look if text, notes, and appendices were destroyed and only the marginal summaries—and not all of those—were preserved. In fact, it is not much more than a very elaborate analytic table of contents written for a bulky but nonexistent treatise. Such as it is, however, Turgot's theoretical skeleton is, even irrespective of its priority, distinctly superior to the theoretical skeleton of the *Wealth of Nations*. In order to arrive at this opinion, it is not necessary to impute to Turgot anything he did not actually say or to credit him with any implications of what he did say that he may possibly not have seen himself. He actually delivered the goods. In calling the work unfinished or a skeleton, I do not mean to say that there is need for uncertain conjecture or generosity of interpretation in order to finish it. It presents a complete system of economic theory. What is lacking any competent economist could supply without adding (except criticism) from his own stock of knowledge. Of course, nobody admires the *Wealth of Nations* for its theoretical skeleton alone. It owes its position to its mature wisdom, its luxuriant illustrations, its effective advocacy of policies. And there is, also, something to be said for the ponderous creation of the academic professional: it was the product of patience, of meticulous care, of self-discipline—and we cannot be sure that Turgot would ever have produced something comparable to it, even if he had had all the leisure in the world. Still, a lesson does follow

from the very different success of both works: in economics, at least, intellectual performance is not enough; finish counts; and so do elaboration, application, and illustration; even now the days are far off when it will be possible, as it is in physics, to shape international thought by an article that covers less than one page. Turgot's contribution fared as well as it did because of his eminence in another walk of life. Even so it never bore the fruits that it easily might have borne.

Since the only satisfactory way of summarizing that summary is to transcribe it, and since, moreover, the most important points will be touched upon in subsequent chapters, only a few general comments will be offered here instead of a Reader's Guide. Roughly the first third of the treatise—the first 31 sections<sup>3</sup>—presents the groundwork including the Cantillon-Quesnay schema of classes and an analysis of their relations in production and distribution that is splashed with physiocrat colors. Certain fundamental propositions, like the proposition that competition always reduces wages to the minimum-of-existence level, are insisted on from the first. Sections XXXII–L contain a theory of barter, price, and money that, so far as it goes, is almost faultless, and, barring explicit formulation of the marginal principle, within measurable distance of that of Böhm-Bawerk. The rest of the treatise is devoted mainly to a capital theory that anticipates most of the nineteenth-century work, and to the subjects of interest, saving and investment, and capital values. Originality in individual points is difficult to assert or to deny, the more so because Turgot does not quote—which is no reproach in the case of such a sketch. But comprehensive vision of all the essential facts and their interrelations plus excellence of formulation are in evidence to a degree that would make the whole of the work an original contribution even if no individual point had been exclusively Turgot's own. And there are practically no definite errors to be found in this first of all the treatises on Value and Distribution that were to become so popular in the later decades of the nineteenth century. It is not too much to say that analytic economics took a century to get where it could have got in twenty years after the publication of Turgot's treatise had its content been properly understood and absorbed by an alert profession. As it was, even J.B.Say—the most important link between Turgot and Walras—did not know how to exploit it fully.

<sup>3</sup> [Apparently, the numbering of the sections in the Schelle edition of the *Oeuvres* differs slightly from the original version in the *Éphémérides* where one (or more) of the sections was suppressed. See ch. 6, sec. 7, n. 5.]