THE EVOLUTION OF MARSHALL'S *PRINCIPLES OF ECONOMICS*

When the First Edition of Marshall's *Principles* appeared in 1890, he was already a man of forty-eight years of age. He had actually been teaching economics since 1868, and had brought out his first book, the small *Economics of Industry*, written in collaboration with Mrs. Marshall, in 1879. The *Principles* was therefore the work of a man who had been studying and thinking economics for a quarter of a century. Before he published his great treatise he had fought his way through his difficulties, largely with the aid of mathematics, and had attained to a clear conception of what he considered to be the fundamental analytical tools needed in the handling of economic problems.

Having regard to the maturity of Marshall's thought when he first published his *Principles*, it is scarcely surprising if there were no changes of major importance in his theory in the thirty years which elapsed between the appearance of the First Edition in 1890 and that of the Eighth and last Edition in 1920.[1]

All Marshall's chief contributions to economics as a science are to be found already stated in the 1890 Edition: the treatment and classification of value problems with reference to the time element, and the discovery (to quote Lord Keynes) of "a whole Copernican system, by which all the elements of the economic universe are kept in their place by mutual counterpoise and interaction";[2] the use of the notion of a partial equilibrium as a tool of analysis, combined with the resolute refusal to circumscribe the ever-changing realities of the economic world within the strait-jacket of the Stationary State; the recognition of the importance of expectations; the notion of substitution at the margin; the concept of consumer's surplus; the formulation and definition of elasticity of demand; the doctrine of quasi-rent; the rôle of internal and external economies in relation to increasing returns; the notion of the representative firm; the limitations of the doctrine of maximum satisfaction; the national dividend, regarded as at once the aggregate net product of, and the demand for, all the factors of production. The list is a long one, and could be further extended. What took place in the

[1] This is clearly indicated in the Prefaces to the successive editions.

[2] *Memorials of Alfred Marshall*, edited by A. C. Pigou, p. 42.

later editions was essentially a process of elucidation and attempted clarification rather than of the introduction of new ideas and the modification of old ones. As Marshall once somewhat ruefully admitted to the present writer, he felt that his strength did not lie in exposition, and he was driven by the controversies and misunderstandings which his book evoked to seek incessantly to find new words in which to clothe his ideas in the hope of making clear his real meaning.

In the First Edition [1] (1890) the *Principles* was divided into seven Books. Books I–IV covered substantially the same ground as in all the later editions; Book V, entitled "The Theory of the Equilibrium of Supply and Demand," dealt with value in short and long periods, with the doctrine of maximum satisfaction and with the theory of monopoly, Book VI, entitled "Cost of Production further Considered," dealt chiefly with the relation of rent and quasi-rent to value, with substitution at the margin and with the distinction between prime and supplementary costs; Book VII, entitled "Value or Distribution and Exchange," covered the theory of distribution.

The principal change in the Second Edition (1891) consisted in the reduction in the number of Books to six as a result of the amalgamation of Books V and VI to make the new Book V, while Book VII became Book VI. The chief purpose of the change, according to the Preface, was "to throw further light on the position held by the element of Time in economics, and to show more clearly how Time modifies the reciprocal influence of the earnings of workers and the prices of the goods made by them. For as regards fluctuations in short periods the leading rôle is held by prices, and a subordinate one by earnings: but as regards the slow adjustments of normal value their parts are

[1] The following is a list of the different editions of the *Principles of Economics* with their dates:

First Edition 1890. *Principles of Economics*, Vol. I. Pp. xii + 754.
Second Edition 1891. *Principles of Economics*, Vol. I. Pp. xxx + 770.
Third Edition 1895. *Principles of Economics*, Vol. I. Pp. xxxi + 823.
Fourth Edition 1898. *Principles of Economics*, Vol. I. Pp. xxix + 820.
Fifth Edition 1907. *Principles of Economics*, Vol. I. Pp. xxx + 870.
Sixth Edition 1910. *Principles of Economics. An introductory volume.* Pp. xxxii + 871.
Seventh Edition 1916. *Principles of Economics. An introductory volume.* Pp. xxxii + 871.
Eighth Edition 1920. *Principles of Economics. An introductory volume.* Pp. xxxiv + 871.

There were thus eight editions over a period of exactly thirty years, or an average of a new edition in slightly less than four years, but only one year separated the First Edition from the Second, while nine years elapsed between the Fourth Edition and the Fifth.

interchanged; and the influence which prices exert on earnings is less than that which earnings exert on prices."

It was also in this Preface that Marshall wrote :

> To myself personally the chief interest of the volume centres in Book V : it contains more of my life's work than any other part; and it is there, more than anywhere else, that I have tried to deal with unsettled questions of the science.

It was in the Second Edition that the Representative Firm made its first official bow to the economic world, although the *idea* was already present in the First Edition when he said that when seeking the normal supply price under increasing returns, "we must select as representative a business which is managed with normal ability and so as to get its fair share of the economies both Internal and External resulting from industrial organisation"[1] (First Ed., p. 523). This was, however, the only instance in the First Edition of the use of the word "representative" in this connection, whereas in the Second Edition the Representative Firm as such was given an important place in the discussion of normal value, especially in Book V, Ch. XI, "The Equilibrium of Normal Supply and Demand concluded. Multiple Positions of Equilibrium."

In the Third Edition (1895) Marshall's powers as a writer were perhaps at their peak, and it is difficult not to feel that from then onwards the process of polishing and compression to which the *Principles* was subjected, even though it was combined with expansion in certain directions, did a good deal to devitalise the book and to rob it of the freshness and spontaneity which characterised it in this and the two earlier editions.

In the Preface Marshall explained that several chapters had been re-written, "chiefly in order to meet the need, which experience has shown to exist, for fuller explanation on certain points." In the five years which had elapsed since the First Edition a large critical and controversial literature had grown up round the *Principles*, and it was in this Third Edition that Marshall had the opportunity of justifying and defending his position in the light of the criticisms which it had encountered. That he was not more successful in disarming many of his critics was due partly to the inherent difficulties in the task he had set

[1] Cf. Marshall's letter to Flux of March 7, 1898 : "The chief outcome of my work in this direction [increasing returns], which occupied me a good deal between 1870 and 1890, is in the Representative firm idea . . ." (*Memorials*, p. 407).

himself of formulating a satisfactory theory of value in terms of cause and effect which would illumine, if it did not solve, the problems of the real world; and partly to his own impatience with rigid definition and an excessive tendency to let the context explain his meaning. Thereby he laid himself open to an unnecessary extent to that common practice of critics of trying to find how much stupidity and nonsense they can extract from the work they are considering, instead of seeking for that interpretation of a doubtful passage which would be most consistent with the general position of the author, and which would not convict him (if he is a man of high standing) either of inexcusable carelessness or of the most elementary blunder in logic. That Marshall's own conception of ambiguity was not a very stringent one can be seen from another part of the Preface to the Third Edition, in which he said :

> The ambiguous term " determine " has been displaced in spite of its prestige by " govern " or " indicate " as occasion requires.

Marshall himself picked out two changes as being of chief importance in this edition : the new form of the first two chapters of Book VI and the alteration in the definition of capital. Of the former he said :

> In the earlier editions the reader was left to import into them the results of the preceding Books. But I had underrated the difficulty of doing that; as is shown by the fact that able and careful critics both at home and abroad have raised objections to those chapters which had been anticipated in other parts of the volume. It seemed necessary therefore to embody in those central chapters a good deal that had been said before, and to supplement by still further explanations.

Although certain additions and deletions were made later, these two " central chapters " embodying his general theory of distribution remain substantially as they were framed in the Third Edition.

The second change caused Marshall more worry and heart-searching than many a decision of far greater intrinsic importance. He says in the Preface :

> The Chapters on Capital and Income have been combined and re-written . . . in order to give effect to a long-cherished design from which I have been held back hitherto by the fear of breaking too much with tradition and especially English tradition.

In the first two editions he had defined social capital as consisting of "those things made by man, by which the society in question obtains its livelihood; or, in other words, as consisting of those external goods without which production could not be carried on with equal efficiency, but which are not free gifts of nature." In the First Edition (p. 130) he added the following sentence after the one just quoted:

> It consists firstly of stores of commodities provided for the sustenance of workers of all industrial grades: and secondly of raw materials, of machinery, and all other aids to production.

This latter sentence was deleted from the Second Edition, but the general sense was retained in a sentence on an earlier page in the same chapter (Second Ed., pp. 124–5).

When he came to the Third Edition, however, Marshall defined social capital as made up of "those kinds of wealth (other than the free gifts of nature) which yield income that is generally reckoned as such in common discourse: together with similar things in public ownership, such as government factories."

Cannan wrote to Marshall in December 1897 to criticise the latter's view of capital, and also to point out that he had retained in the Third Edition a statement in a footnote, dating from the First Edition, to the effect that a private dwelling-house was "not capital at all, in the use of the term which we are adopting." Marshall replied (January 7, 1898) defending his general position, but admitting that he had overlooked the statement referring to a private dwelling-house, which he agreed was now incorrect in the light of his new definition. He added a little plaintively:

> Is there any other change needed to make me consistent with myself? I cannot alter my definition of wealth to make it include income: for I see only evil in that change. But outside of that, is there anything I can do to free me from reproach in your eyes? [1]

The change in the definition of capital is symptomatic of Marshall's growing emancipation from the terminology of his economic predecessors. If the first two editions may be described as Marshall in ancient dress, the Third Edition marks the transition to Marshall in modern dress, a process which was continued in the Fourth Edition and completed in the Fifth—though to express it thus is perhaps to exaggerate the difference between the earlier and later versions.

[1] *Memorials*, p. 406.

Among the "minor changes" mentioned in the Preface to the Third Edition is the expansion of Note XIV of the Mathematical Appendix from a meagre two paragraphs in the earlier editions to about six pages, containing what is perhaps the kernel of Marshall's theory of value. One important feature of Note XIV is the theory of imperfect competition which is clearly stated there (Third Ed., pp. 802–3; Eighth Ed., pp. 849–50). In that part of the Note he referred, in the Third Edition, to a passage in Book V, Chapter XI, which in the fourth and later editions was transferred in part to Book IV, Chapter XI. If the whole of this discussion had remained in the chapter dealing with equilibrium in relation to increasing returns, it would probably have drawn considerably more attention to the problem of particular markets for producers than has in fact been the case. An example of the way in which re-writing often weakened the force of what Marshall had said earlier in a more direct and vigorous way, can be found if the final wording, dating from the Fourth Edition (see Eighth Ed., p. 458), is compared with the original wording in the Second Edition of the following sentences:

> There are firms whose business connections have been built up by a gradual investment of capital, and are worth nearly as much as, or possibly even more than, the whole of their material capital. When a business is thus confined more or less to its own particular market, a hasty increase in its production is likely to lower the demand price in that market out of all proportion to the increased internal economies that it will gain, even though its production is but small relatively to the broad market for which in a more general sense it may be said to produce. (Second Ed., pp. 488–9.) [1]

In the Fourth Edition (1898), as the Preface points out, "The changes have been kept within small compass: and in the hope that they are nearly final the present edition has been made a large one."

It will be seen from the list of editions given above that the Fourth Edition was actually shorter by a few pages than the Third, although in actual number of words it was probably slightly longer, as a number of technical discussions, previously in the text, were transferred to Notes in smaller type, which were placed at the end of chapters. Marshall had been becoming

[1] In the final version the first of the two sentences quoted above was deleted, while the second sentence became part of a longer one beginning: "But these are the very industries [manufactures which are adapted to special tastes] in which each firm is likely to be confined to its special market; and if it is so confined a hasty increase in its production is likely to lower . . . etc."

alarmed by the way in which the book was growing with each successive edition, and he was determined in this case that he would add nothing new unless it was balanced by corresponding deletions of what he regarded as less essential or redundant matter. Hence a good many paragraphs in the text, and footnotes, dating from the earlier editions, were omitted, not invariably to the ultimate gain of the book.

The Fifth Edition (1907) saw a very considerable re-arrangement of the text of the *Principles* and a good deal of re-writing of certain portions.

The whole of Chapters II to VI in Book I in the earlier editions was transferred to the end of the volume in the form of Appendices, and the series of long Notes which had been placed at the end of chapters in the Fourth Edition were treated in a similar manner. This rearrangement had the regrettable result of dethroning the long and interesting chapter, "The Growth of Free Industry and Enterprise," from its position at the beginning of the volume. (Book I, Chapter II, prior to the Fifth Ed.) The historical approach to the contemporary economic world played an important rôle in Marshall's scheme of thought, and he had at one time contemplated a very large-scale work on economic history for which he collected masses of material.[1] The loss of this historical perspective was very doubtfully balanced by the gain of the few extra pages which resulted from the use of a smaller type in the Appendix. He wrote himself of his aim in these early chapters :

> Complaints have been made that my first Book keeps the reader too long from entering on the new work before him. But it is needed from my point of view. The chapters on the Growth of Free Industry and of Economic Science are no doubt long, in spite of their being wholly inadequate if regarded as sketches of economic history. But they have no claim to be so regarded. Their aim is different. It is to emphasise, as the keynote of the treatise, the notion that economic problems are not mechanical, but concerned with organic life and growth. In combination with the following chapters on Scope and Method they claim to offer a view continuous with that of classical tradition, but differing in the stress laid on this element of organic life-growth. They claim to show that the past can afford just guidance for the present and the future only when full account is taken of the changes in man himself, and of his modes of life and thought and work; and to sketch some leading features of those changes which are of most import-

[1] Always referred to by him in later years as "The White Elephant."

ance to the economist. They insist that though there is a kernel of man's nature that has scarcely changed, yet many elements of his character, that are most effective for economic uses, are of modern growth. The "strategy" of his economic conflict with nature remains nearly the same from age to age, and the lessons drawn from experiences of it can be handed down usefully from father to son. But the "tactics" of the conflict waged by men somewhat different from us, and under conditions widely different from ours, are of little or no avail. To carry over from one age to another both strategical and tactical lessons, is to incline somewhat towards a mechanical view of economics; to carry over strategical lessons only is characteristic of a biological view.[1]

In addition to Appendix G on "The Incidence of Local Rates, with some Suggestions as to Policy," a virtually new chapter was added at the end of Book VI (Ch. XIII) entitled "Progress in relation to Standards of Life," involving the addition of some 33 pages; and once again there was a drastic rearrangement of the chapters dealing with rent and quasi-rent [2] (Book V, Chs. VIII–XI). It may be noted that the term "elasticity of supply" appeared for the first time in this edition (Book V, Ch. XII, pp. 456–7). In a long Preface written for the Fifth Edition, Marshall explained that about twelve years previously he had abandoned his original hope of publishing what he wished to say in two volumes: "I had laid my plan on too large a scale; and its scope widened, especially on the realistic side, with every pulse of that Industrial Revolution of the present generation, which has far outdone the changes of a century ago, in both rapidity and breadth of movement." Accordingly, he set to work on more ample lines, but found that "four thick volumes would be needed for the task." Finally, he had decided to bring out two independent volumes, one on Industry and Trade, and one on Money Credit and Employment, and he expressed the hope that "it may be possible to compress these two volumes, together with some discussions of the functions of Government into a single volume, which may supplement the present volume, and form a consecutive treatise of moderate length" (Preface to Fifth Ed., p. vi). He went on to express his own views as to the "scope and purpose" of the *Principles*, noting that "some able and friendly critics have taken a view of the matter rather different from my own."

[1] "Distribution and Exchange," by A. Marshall, in the ECONOMIC JOURNAL, March 1898, p. ~~8~~. 44

[2] The nature of the changes as regards quasi-rent is discussed in more detail below.

Its scope is similar in some respects, though not in all, to that of volumes on *Foundations* (*Grundlagen*), which Roscher and some other economists have put at the head of groups of semi-independent volumes on economics. It avoids such special topics as currency and the organisation of markets. And in regard to such matters as the structure of industry, employment, and the problem of wages, it deals mainly with normal conditions. Its motto, *Natura non facit saltum*, does not deny the existence of earthquakes and flashes of lightning. It is designed merely to indicate that those manifestations of nature which occur most frequently, and are so orderly that they can be closely watched and narrowly studied, form the foundations of economic as of all other scientific work; while those which are sudden, infrequent, and difficult of observation are commonly reserved for special examination at a later stage. . . .

The Mecca of the economist lies in economic biology rather than in economic dynamics. But biological conceptions are more complex than those of dynamics; a volume on Foundations must therefore give a relatively large place to mechanical analogies; and frequent use is made of the term equilibrium, which suggests something of statical analogy. This fact, combined with the predominant attention paid in the present volume to the normal conditions of life in the modern age, has suggested the notion that its central idea is statical rather than "dynamical." But that suggestion is incorrect in any case, and it is wholly unfounded, if the terms are interpreted as in physical science.

The existing structure and order are the outcome of progress in the past. . . . The present volume deals with the forces of progress, although it does not pursue their influence back beyond modern times. . . . [It] is concerned throughout with the forces that cause movement: and its keynote is that of dynamics. But the forces to be dealt with are so numerous, that it is best to take a few at a time; and to work out a number of partial solutions as auxiliaries to our main work. Thus we begin by isolating the primary relations of supply, demand and price in regard to a particular commodity: we reduce to inaction all other forces by the phrase "other things being equal." We do not suppose that they are inert: but for the time we ignore their activity. This scientific method is a great deal older than science: it is the method by which, consciously or unconsciously, sensible men have dealt from time immemorial with every difficult problem of ordinary life. The next step is to set more forces free from the hypothetical slumber imposed on them; and to call into activity, for instance, changes in the demand for hides when considering the forces that govern the price of beef. At the end of this second stage the area of the dynamical problem has become much larger; the area covered by provisional statical assumptions has

> become much smaller and at last is reached the great central problem of the Distribution of the National Dividend among a vast number of different agents of production. The dynamical principle of "Substitution" is seen ever at work, causing the demand for, and the supply of, any one set of agents of production to be influenced, through indirect channels, by the movements of demand and supply in relation to others, even though situated in far remote fields of industry. Our main concern is with human beings who are impelled, for good and evil, to change and progress. Fragmentary statical hypotheses are useful as temporary auxiliaries to dynamical—or rather biological—conceptions: but the central idea in a volume on the Foundations of economics, as in any other, must be that of living force and movement. (Preface to Fifth Ed., pp. vi–x.)

The new pages introduced into the text of the Fifth Edition were numerous, and often of considerable importance in the light they throw on Marshall's system of thought; but they added no really fresh ideas, and were merely another attempt (by no means always successful) to express what he had intended to say, in a more perspicuous form.

The Sixth Edition (1910) contained for the first time the words *An introductory volume*, as a sub-heading to the title *The Principles of Economics*; while the suffix "Vol. I" disappeared from the title-page. Very little new matter was introduced into this edition, and the pagination throughout was practically the same as in the Fifth Edition. It may be noted, however, that it was in the Sixth Edition that Marshall inserted the famous footnote on what quasi-rent did and did not mean (p. 424 n.) which caused so much perplexity, among others to his critic Davenport.[1] The Preface also to the Sixth Edition was substantially a reprint of that in the Fifth, though one or two alterations are deserving of note. Thus in regard to his plan of work he stated that he proposed to "bring out as soon as possible an almost independent volume, part of which is already in print, on *National Industry and Trade*. . . . This may be followed by a companion volume on *Money, Credit, and Employment*: and perhaps by a third, which will treat of the ideal and the practicable in social and economic structure, with some account of taxation and administration." In dealing with the development of his ideas, Marshall said that increasing stress had been laid in successive editions on the probable long-

[1] Cf. *The Economics of Alfred Marshall*, by H. J. Davenport, pp. 381–2 n., and "Davenport on the Economics of Alfred Marshall," by C. W. Guillebaud, in ECONOMIC JOURNAL, March 1937, pp. 33–4.

run importance of diminishing returns in the case of land; "and also on the correlated fact that in every branch of production and trade there is a margin, up to which an increased application of any agent will be profitable under given conditions, but beyond which its further application will yield a diminishing return unless there be some increase of demand accompanied by an appropriate increase of other agents of production needed to co-operate with it. And a similar increasing stress has been laid on the complementary fact that this notion of a margin is not uniform and absolute: it varies with the conditions of the problem in hand, and in particular with the period of time to which reference is being made. The rules are universal that, (1) marginal costs do not govern price; (2) it is only at the margin that the action of those forces which do govern price can be made to stand out in clear light; and (3) the margin which must be studied in reference to long periods and enduring results, differs in character as well as in extent from that which must be studied in reference to short periods and to passing fluctuations" (Preface to Sixth Ed., p. x).

The Seventh Edition (1916) and the Eighth Edition (1920) are both almost completely identical with the Sixth Edition; only a few minor alterations were made, and the pagination was the same. In detail, however, the changes were often of considerable interest, as reflecting Marshall's endeavour to take some account of economic developments which had become more prominent in the twentieth century.[1]

The Preface to the Seventh Edition omitted any reference to a third volume in addition to *Industry and Trade*, then in the press; but in the Preface to the Eighth Edition, after stating that "*Industry and Trade* published in 1919, is in effect a continuation of the present volume," Marshall went on to say: "A third (on Trade, Finance and the Industrial Future) is far advanced. The three volumes are designed to deal with all the chief problems of economics, so far as the writer's power extends."

Money Credit and Commerce was in fact published in 1923, and in the following year Marshall died.

The treatment of the Prefaces in the different editions is characteristic of Marshall's unwillingness to admit finality of arrangement with regard to this dearest child of his brain. From the Second to the Fourth Editions he placed first a short Preface

[1] Cf. the reference to "those great joint-stock companies which often stagnate, but seldom die" (Seventh Ed., p. 343) to which Mr. Shove draws attention in his article on Marshall in the present number of the JOURNAL.

drawing attention to the principal changes in the edition in question, and then reprinted the whole of the Preface to the First Edition. In the Fifth Edition he wrote a long new Preface summing up and emphasising what he regarded as the principal ideas which he had sought to bring out in the *Principles*, and followed this with only a few paragraphs from the Preface to the First Edition. In the Sixth Edition he retained a large part of what he had written as a Preface to the Fifth Edition (though he added some new matter), and continued the same extracts from the Preface to the First Edition. In the Seventh Edition he virtually reprinted the Preface to the Sixth Edition, but brought an additional paragraph in to the extracts from the Preface to the First Edition. In the Eighth and last Edition he reprinted *in extenso* (apart from a footnote), and placed in the front of the volume, the Preface to the First Edition and then followed it by what was substantially the same Preface as to the Seventh Edition.

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Out of the many possible elements in Marshall's *Principles* which could be chosen for closer examination, three will be selected here: his treatment of utility; his notion of consumer's surplus; and his doctrine of quasi-rent.

Utility.

Marshall had grown up in the school of the English utilitarians, but he was himself not a utilitarian in a commonly accepted sense of the term. Mrs. Marshall has recorded the following notes of a lecture which was delivered by him at Cambridge in 1873–4:

> There is a popular usage of the word utilitarian in which utilitarian considerations are opposed to ethical, or are at all events distinct from them. I have tried to show that this usage of the phrase "a utilitarian philosophy" is so utterly trivial and foolish that it is not worth while to discuss it. I have argued that not only is ethical well-being a portion of that well-being which any reasonable utilitarian system urges us to promote, but that it is much the most important element in that well-being.

He went on to say:

> Bentham had more influence on economics than any other non-economist; his contribution being the stress he laid on measurement. When you have found a means of measurement you have a ground for controversy, and so it is a means of progress.

Many years later, writing to Edgeworth (September 1902), Marshall said:

> I had forgotten I had written (and cut out) what you quote from my Edition I, about balancing of motives. But I did so no doubt because I found it was habitually misunderstood, especially by Ethicists: they *would* take such phrases as Utilitarian manifestoes. So I set myself to cut out short sentences on a big subject.[1]

Particularly in his First Edition Marshall used very freely the contrasting words "pleasure" and "pain." Thus he wrote: "We may now turn to consider how far the price that is actually paid for a thing represents the pleasure that arises from its possession; or in other words the 'utility of wealth'" (First Ed., p. 175). Elsewhere he spoke of the "desirability or utility" of a thing to a person as commonly measured by the money price that he would give for it, and added that "to different persons the same piece of money affords the means of pleasures of very varying intensities . . . so that it is not at all safe to say that two men with the same income will derive equal pleasure from its use or would suffer equal pain from the same diminution of it" (First Ed., pp. 151 and 152). He defined the marginal utility to a person of 10 lb. of tea as "the difference between the happiness which he gets from buying 9 lb. and 10 lb."; and total utility as "the whole benefit that he gets from the tea" (First Ed., pp. 154 and 155).

There were no substantial changes in the Second Edition, except that utility was now defined as "the pleasure-giving power of a commodity," total utility being "the total pleasure-affording power of a commodity."

By the Third Edition, however, Marshall was becoming sensitive to contemporary criticisms of utilitarian phraseology, and he went through the various pages in which he had used the words "pleasure" and "pain," deleting "pain," and substituting in most (though not in all) cases, for "pleasure" the word "satisfaction," or "benefit," or "gratification." Thus the total utility of a commodity to a person was defined as "the total benefit or satisfaction yielded to him by it"; and utility as "benefit-giving power."

Marshall inserted in the Fourth Edition a discussion of the

[1] *Memorials of Alfred Marshall*, p. 437. I have been unable to identify with certainty the passage in the First Edition referred to by Marshall, but possibly it is the footnote to pp. 83–4 in the First Edition which is reproduced later in this article.

suitability of the term utility, which he deleted from the Fifth and later Editions, and which ran as follows :

> Utility and Want are taken as correlative terms. The utility of a thing to a person at a time is measured by the extent to which it satisfies his wants. And wants are here reckoned quantitatively, that is, with regard to their volume and intensity; they are not reckoned qualitatively according to any ethical or prudential standard. Judged by such a standard solid food may be more useful than alcohol of equal price, and warm underclothing than a new evening dress. But if a person prefers the alcohol or the evening dress, then it satisfies the greater want for him; it has the greater utility for him. No doubt this use of Utility might mislead those not accustomed to it; but this seldom occurs in practice. But the term has much authority on its side. Substitutes which have been proposed for it, such as Ophelimity (Prof. Pareto's term), Agreeability, Enjoyability, Desirability, etc., are not faultless : and it seems best for the present to adhere to Utility in spite of its faults. (Fourth Ed., p. 167.)

It was in the Fourth Edition that Marshall adopted his standard and final definition of total utility, to which he adhered throughout the later editions : "The total utility of a thing to anyone . . . is the total pleasure or other benefit it yields him."

In dealing with the closely associated notion of money as the measure of the strength of motive, Marshall in the first two editions included a paragraph and footnote which were deleted from the Third Edition, and which ran as follows :

> Those economists who have spoken of their sciences as concerned chiefly with self-regarding motives, have tacitly included among them a person's desire for the well-being of his family. But this is clearly illogical. The real reason why this desire is included and yet other benevolent and self-sacrificing motives are to a great extent left on one side by economics is that their action is irregular. The expenses which an Englishman with £500 a year will incur for the education of his children can be told pretty well beforehand. But as the family in England has narrow limits, no good guess could be made of how much he would give to support a destitute second cousin. Still less could it be said how much time he would spend in visiting the fatherless and widows in their affliction (First Ed., p. 83).
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> It may be objected that the higher motives are so different in quality from the lower, that the one cannot be weighed against the other. There is some validity in this objection. The pain which it would cause an earnest and good man to do deliberately a wrong action, is so great that no pleasure can compensate for it; it cannot be weighed or measured.

> But even here it is not the quality of the pain, but its amount, that hinders it from being measured; the pain is practically infinite. People of a less noble nature do however sometimes deliberately act wrongly in order to gain some pleasure: and then the pleasure has weighed against and has weighed down the pain of wrong-doing. Temptations to do wrong have so much variety in form and manner that their action can seldom be tabulated and reduced to law. But if it happens that the same kind of temptation is presented to a great many people in exactly the same way, it may be measured. For instance in the old days of bribery the pain and shame of voting against one's conscience was measured; and experienced agents could tell how many people in a given district would be induced to incur it for a bribe of 5s. and how many for a bribe of £1. It is not likely that many facts of this kind will ever be ascertained; but if they should, it may be worth while to build up a special branch of economics, a sort of economic pathology, to deal with them. (First Ed., pp. 83–4 n.)

Consumer's Surplus.

In the First Edition Consumers' Rent (the term consumer's surplus dates from the Fourth Edition) was defined as follows:

> We have already seen that the price which a person pays for a thing, can never exceed, and seldom comes up to that which he would be willing to pay rather than go without it: so that the gratification which he gets from its purchase generally exceeds that which he gives up in paying away its price. The excess of the price which he would be willing to pay rather than go without it, over that which he actually does pay is the economic measure of this surplus pleasure: and for reasons which will appear later on, may be called Consumers' Rent. (First Ed., p. 175.)

A footnote appended to the word "Rent" called attention to the fact that "The following account of Consumers' Rent is reproduced with slight alterations from some papers printed for private circulation in 1879." [1]

It is of interest to note that, in an entirely different context (Book VII, Ch. X, § 1), after speaking of the producer's surplus derived by a person who owned a thing, *e.g.*, a picture, "he being supposed to use the thing to produce the satisfactions for himself," Marshall added:

> This surplus is a different thing from a Consumer's Surplus, which is the excess of the money value to a person

[1] See *The Pure Theory of Domestic Values*, by Alfred Marshall. (London School of Economics Reprint, pp. 20–37.)

of the satisfactions which he derives from the thing over the price he has to pay for it.[1] (First Ed., p. 665 n.)

No change (apart from the deletion of the footnote) was made in the Second Edition in the paragraph quoted above from the First Edition (p. 175). But some further light was thrown on the origin of the concept in part of a footnote in Book III, Ch. VI (deleted from the Fourth Edition), which ran as follows :

> The notion of an exact measurement of Consumers' Rent was published by Dupuit in 1844. But his work was forgotten; and the first to publish a clear analysis of the relation of total to marginal (or final) utility in the English language was Jevons in 1871, when he had not read Dupuit. The notion of Consumers' Rent was suggested to the present writer by a study of the mathematical aspects of demand and utility under the influence of Cournot, von Thünen and Bentham. (Second Ed., p. 184 n.)

In the Third Edition the words " a surplus of pleasure," in the paragraph quoted above from the First Edition, were changed to " a surplus of satisfaction," and Consumers' Rent was defined as " the economic measure of this surplus of satisfaction."

Thereafter there was no change in the definition, except that in the Fourth Edition the term consumer's surplus was adopted with the following explanation : " It [the economic measure of surplus satisfaction] has some analogies to a rent : but is perhaps best called simply consumer's surplus."

The concept of consumer's surplus raised more controversy and objections than any other of Marshall's contributions to economics, with the possible exception of quasi-rent. In the first two editions it was only adumbrated in brief outline, and it was not till the Third Edition that he fully developed his argument and formally added the qualification that, in drawing his demand curves for the purpose of indicating consumer's surplus, he was assuming the marginal utility of money income to the purchaser to remain constant. The chapter dealing with consumer's surplus underwent very little further change after the Third Edition.

J. S. Nicholson was one of Marshall's most vigorous critics on this point, and successive editions reveal Marshall's reactions. At all times he hated being drawn into controversy, as a waste of time; but he was also very sensitive to hostile criticism. In the Third Edition (p. 203 n.) he said :

[1] There was also a reference in the chapter on the doctrine of Maximum Satisfaction to " Consumers' Surplus or Rent " (First Ed., p. 446). This is the only instance I have found where the apostrophe is placed after the final s in " Consumers," when the succeeding word was " Surplus " and not " Rent."

> Prof. Nicholson (*Principles of Political Economy*, Vol. I, and ECONOMIC JOURNAL, Vol. IV), apparently under some misapprehension as to the drift of the doctrine of consumers' rent, has raised several objections to it which have been answered by Prof. Edgeworth in the same Journal.

In the Fourth Edition (p. 202 n.) this sentence became a little sharper :

> Prof. Nicholson (. . . .) having misconceived the nature of consumers' rent, raised several objections to it, which have been . . . etc.

However in the Fifth and subsequent Editions this was replaced by a more colourless version :

> Prof. Nicholson (. . . .) has raised objections to the notion of consumer's surplus which have been . . . etc.

Quasi-Rent.

In a letter to J. B. Clark, written in November 1902, Marshall described the origin of his doctrine of quasi-rent in the following terms :

> I may say that my doctrine of quasi-rent, though only gradually developed, took on substance in 1868; when I was very much exercised by McLeod's criticisms—now unjustly forgotten—on the unqualified statement that cost governs value. He said : " your economist tells you that the wages and profits of people in the iron trade govern the price of iron : but they themselves know better; they know that the price of iron governs their wages and profits." I then started out on a theory of value in which I conceded to McLeod all that he asserted *for short periods* : and in effect, though not in name and not at all clearly, I regarded wages and profits as of the nature of rents for short periods.[1]

In the earlier editions Marshall formulated his doctrine of quasi-rent chiefly from the differential standpoint. Thus he said in the First Edition (p. 493) :

> It will appear that many advantages which are to be regarded as differential, and as affording a quasi-rent, when we are considering the action of economic causes during short periods of time, are to be regarded as not differential, and as yielding profits when we are studying the broader effects of economic effects through longer periods.

It is true that he was thinking of the differential element as a short-period surplus above prime costs, but his language, especially in the application of quasi-rent to the problem of distribution in the short period, was often unguarded; and was largely responsible for the great amount of misunderstanding and

[1] *Memorials*, p. 414.

misrepresentation of his doctrine that he had to endure at the hands of contemporary economists. There was indeed no part of the *Principles* which underwent more incessant change during the first five editions than the chapters devoted to the exposition of quasi-rent. At the same time it does not appear that there was any real alteration in the content of the doctrine from first to last—it was simply a matter of successive attempts to meet criticism and to put a difficult and novel conception in as clear a form as possible. In the process of doing this Marshall was led, firstly, to lay increasing stress on the scarcity aspect of quasi-rent—*i.e.*, the scarcity value of specialised equipment, skilled labour, etc., the supply of which could be regarded as fixed in the short period; and secondly, to increasing use of analogies and illustrations (parables they might almost be termed) as a way of explaining his meaning. Space does not permit of an adequate account of the first of these aspects of Marshall's treatment of quasi-rent; [1] but something can be said here of the broad changes in his method of exposition.

In the First Edition the theory of quasi-rent was set out quite briefly in Book VI, Ch. III, entitled "Cost of Production. Limited Sources of Supply. Continued." There were a number of short illustrations: the settler taking up land in a new country; a war which was not expected to last long, but which cut off part of our food supplies; an exceptional demand for a certain kind of fabric caused by a sudden movement of the fashions. Considerable use was also made of the term quasi-rent in Book VII, Chs. VI and IX, in dealing with the earnings of specialised skill and with fluctuations of profit. Also in Book VII, in Ch. X, entitled "Demand and Supply in relation to Land. Producer's Surplus," we find the first mention of the parable of a shower of meteoric stones to illustrate the characteristics of both rent and quasi-rent.

In the Second Edition, where Books V and VI in the First Edition were combined to form the new Book V, there was an appreciable expansion of the treatment of quasi-rent in Book V. Chs. VIII and IX, entitled "On the Value of an Appliance for Production in Relation to that of the Things Produced by it. Rent and Quasi-rent" and "On the Value of . . . etc. Continued." The meteoric stones illustration was transferred from its original place in Book VII, Ch. X, to Book V, Ch. VIII; other-

[1] For a full account of all the changes in successive editions the reader must be referred to the Variorum Edition of Marshall's *Principles*, which is in process of preparation by the present writer. A number of the principal changes are noted in an article by R. Opie, "Die Quasi-rente in Marshalls Lehrgebäude" in *Archiv für Sozialwissenschaft*, Band 60, 1928.

wise the application of the theory of quasi-rent to problems of distribution (wages and profits) was similar to that in the First Edition. Although there were some interesting changes in detail and additions in the Third Edition, the general arrangement was the same as in the Second Edition, but the emphasis on quasi-rent in relation to the earnings of labour in Book VI, Ch. V, was much diminished.

In the Fourth Edition the whole of the discussion on quasi-rent in Book V was collected in a single chapter (Ch. IX) entitled "Quasi-rent, or Income from an Appliance for Production already made by Man, in Relation to the Value of its Produce." The order was re-arranged, and two of the illustrations—the settler taking up land, and the meteoric stones—were placed in a "Note on Illustrations of the General Principle discussed in this Chapter" at the end of Chapter IX. A new illustration—the hire of a pony—was introduced in Chapter IX, which was deleted from the subsequent editions, and which ran as follows:

> One side of the likeness between rents and quasi-rents may be simply illustrated. The hire of a pony is the excess of its value over that of a pony which is so weak as to have no hiring value at all. The hire of ponies, like that of land, is governed by the value of the services they will render, and the value of those services is governed *for the time* by the relations in which the stock of ponies etc. stands to the demand for such services. But here comes in the unlikeness: for the clause "for the time," which is needed in the case of ponies is not needed in that of land. If nothing unexpected has happened, the stock of ponies will have been so adjusted to the demand that an average (or normal) pony during a life of average length and activity will yield a hire giving normal profits on its cost of production. As a rule it will do this, and yield no "surplus" above normal profits to the producer. Of course the demand for ponies may have been wrongly estimated, and the hire (or quasi-rent) yielded by an average pony may exceed or fall short of normal profits on its costs of production. But the divergence can be only for short periods in the case of ponies, because they are so quickly reared, and they so quickly die off, that any error in the adjustment of supply to demand can be quickly set right. The unlikeness between the rent of land and the quasi-rents of other things lies in the fact that the hire of other things cannot, under ordinary circumstances, and for a long time, diverge much from normal profits on their cost of production; while the supply of fertile land cannot be adapted quickly to the demand for it, and therefore the income derived from it may diverge permanently much from normal profits on the cost of preparing it for cultivation. (Fourth Ed., pp. 494–5.)

Of all the editions, the Fourth was the one in which the doctrine of quasi-rent was most clearly and comprehensively stated.

When we come to the Fifth Edition we find a very extensive re-writing and re-arrangement of the chapters on rent and quasi-rent—Book V, Chs. VIII–XI. Book V, Ch. VIII, which was almost entirely new, was entitled "Marginal Costs in Relation to Values. General Principles." It was followed by Ch. IX, with the same title "Continued," which contained the main theory of quasi-rent in a much-altered guise. The chapter began with a new illustration of a tax upon printing, and then took up the meteoric stones parable, which was elaborated so that it ran through the whole of the rest of the chapter. It is difficult to avoid the conclusion that, when explained in this way almost entirely by reference to an imaginary illustration, the doctrine of quasi-rent was rendered harder and not easier to grasp than it had been in the earlier editions when it was put in a more simple and direct form.

It may also be noted that, in the Fifth Edition, in dealing with distribution in Book VI, especially in Ch. VIII on "Profits of Capital and Business Power," Marshall substituted in a number of occasions the words "income" or "special earnings," or "gains" for the word "quasi-rent."

Whether Marshall was content with his final version in the Fifth Edition it is impossible to say, but at least he made no further changes in his method of presenting the doctrine of quasi-rent in the last three editions.

In conclusion, it may be said that a careful survey and comparison of the different editions of Marshall's *Principles* does not reveal any substantial development of his ideas, or even of his technique. It is a matter for regret that he should have devoted so many valuable years (he himself estimated that each edition involved fully a year's work) to bringing out successive editions of the *Principles*—years which could have been more usefully spent in completing the great work which unfortunately at the end of his life he left unfinished. *Money Credit and Commerce* was a very different book from the one he could have written twenty years earlier; while the projected volume on "the ideal and the practicable in social and economic structure, with some account of taxation and administration," which would have summed up the conclusions of a lifetime of observation and thought, never came into being at all.

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