



Alfred Marshall, 1842-1924

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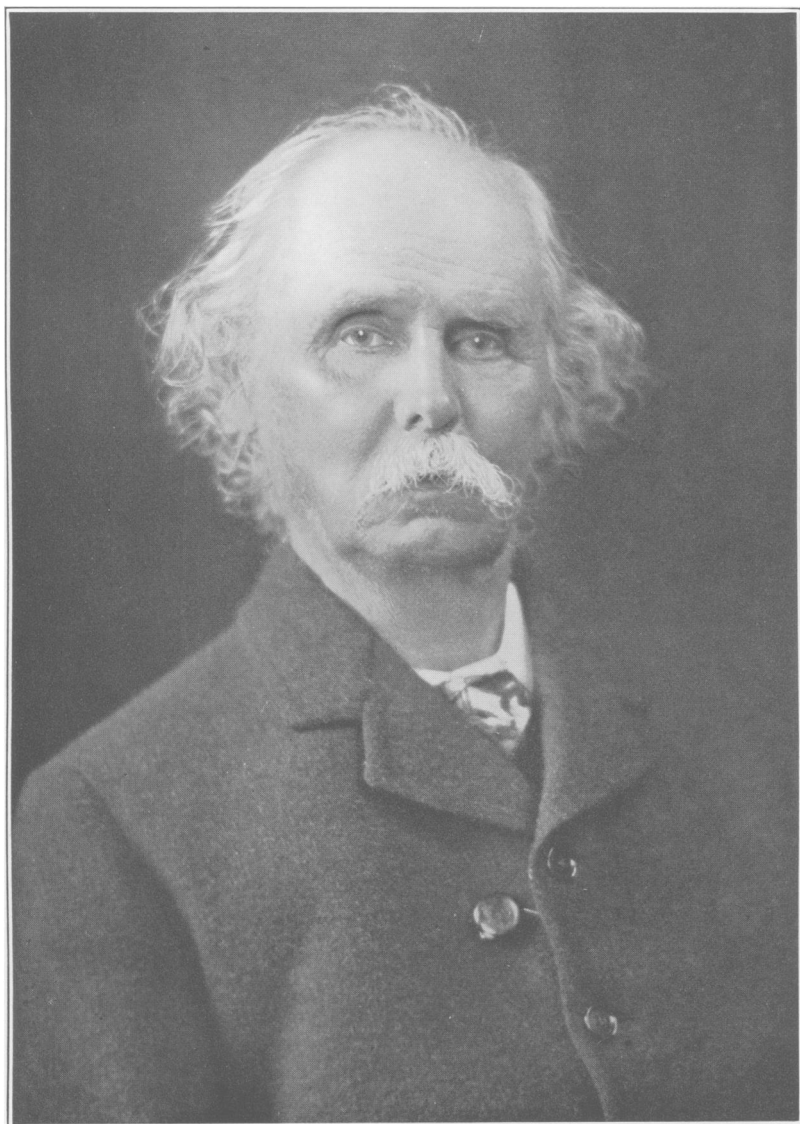
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ALFRED MARSHALL, 1921.

Frontispiece.

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ALFRED MARSHALL, 1842-1924¹

I

ALFRED MARSHALL was born at Clapham on July 26, 1842, the son of William Marshall, a cashier in the Bank of England, by his marriage with Rebecca Oliver. The Marshalls were a clerical family of the West, sprung from William Marshall, incumbent of Saltash, Cornwall, at the end of the seventeenth century. Alfred was the great-great-grandson of the Reverend William Marshall,² the half-legendary herculean parson of Devonshire, who, by twisting horseshoes with his hands, frightened local blacksmiths into fearing that they blew their bellows for the devil.³ His great-grandfather was the Reverend John Marshall, Headmaster of Exeter Grammar School, who married Mary Hawtrey, daughter of the Reverend Charles Hawtrey, Sub-Dean and Canon of Exeter, and aunt of the Provost of Eton.⁴

His father, the cashier in the Bank of England, was a tough

¹ In the preparation of this Memoir I have had great assistance from Mrs. Marshall. I have to thank her for placing at my disposal a number of papers and for writing out some personal notes from which I have quoted freely. Alfred Marshall himself left in writing several autobiographical scraps, of which I have made the best use I could.

² By his third wife, Mary Kitson, the first child he christened in his parish, of whom he said in joke that she should be his little wife, as she duly was twenty years later.

³ This is one of many stories of his prodigious strength which A. M. was fond of telling—how, for example, driving a pony trap in a narrow Devonshire lane and meeting another vehicle, he took the pony out and lifted the trap clean over the hedge. But we come to something more prognostical of Alfred in a little device of William Marshall's latter days. Being in old age heavy and unwieldy, yet so affected with gout as to be unable to walk up and down stairs, he had a hole made in the ceiling of the room in which he usually sat, through which he was drawn in his chair by pulleys to and from his bedroom above.

⁴ Thus Alfred Marshall was third cousin once removed to Ralph Hawtrey, author of *Currency and Credit*—so there is not much in the true theory of Money which does not flow from that single stem. A. M. drew more from the subtle Hawtreys than from the Reverend Hercules.

old character, of great resolution and perception, cast in the mould of the strictest Evangelicals, bony neck, bristly projecting chin, author of an Evangelical epic in a sort of Anglo-Saxon language of his own invention which found some favour in its appropriate circles, surviving despotically-minded into his ninety-second year. The nearest objects of his masterful instincts were his family, and their easiest victim his wife; but their empire extended in theory over the whole of womankind, the old gentleman writing a tract entitled *Man's Rights and Woman's Duties*. Heredity is mighty, and Alfred Marshall did not altogether escape the influence of the parental mould. An implanted masterfulness towards womankind warred in him with the deep affection and admiration which he bore to his own wife, and with an environment which threw him in closest touch with the education and liberation of women.

II

At nine years of age Alfred was sent to Merchant Taylors School, for which his father, perceiving the child's ability, had begged a nomination from a Director of the Bank.¹ In mingled affection and severity his father recalls James Mill. He used to make the boy work with him for school, often at Hebrew, until eleven at night. Indeed Alfred was so much overworked by his father that, he used to say, his life was saved by his Aunt Louisa, with whom he spent long summer holidays near Dawlish. She gave him a boat and a gun and a pony, and by the end of the summer he would return home, brown and well. E. C. Dermer, his fellow-monitor at Merchant Taylors, tells that at school he was small and pale, badly dressed, looked overworked and was called "tallow candles"; that he cared little for games, was fond of propounding chess problems,² and did not readily make friends.³

¹ "Do you know that you are asking me for £200?" said the Director; but he gave it.

² Mrs. Marshall writes: "As a boy, Alfred suffered severely from headache, for which the only cure was to play chess. His father therefore allowed chess for this purpose; but later on he made A. promise never to play chess. This promise was kept all through his life, though he could never see a chess problem in the newspapers without getting excited. But he said that his father was right to exact this promise, for otherwise he would have been tempted to spend all his time on it." A. M. himself once said: "We are not at liberty to play chess games, or exercise ourselves upon subtleties that lead nowhere. It is well for the young to enjoy the mere pleasure of action, physical or intellectual. But the time presses; the responsibility on us is heavy."

³ His chief school friends were H. D. Trail, later Fellow of St. John's College, Oxford, and Sidney Hall, afterwards an artist. Trail's brother gave him a copy of Mill's *Logic*, which Trail and he read with enthusiasm and discussed at meals at the Monitors' table.

Rising to be Third Monitor, he became entitled in 1861, under old statutes, to a scholarship at St. John's College, Oxford, which would have led in three years to a Fellowship, and would have furnished him with the same permanence of security as belonged in those days to Eton Scholars at King's or Winchester Scholars at New College. It was the first step to ordination in the Evangelical ministry for which his father designed him. But this was not the main point for Alfred—it meant a continued servitude to the Classics.¹ He had painful recollections in later days of his tyrant father keeping him awake into the night for the better study of Hebrew, whilst at the same time forbidding him the fascinating paths of mathematics. His father hated the sight of a mathematical book, but Alfred would conceal Potts' Euclid in his pocket as he walked to and from school. He read a proposition and then worked it out in his mind as he walked along, standing still at intervals, with his toes turned in. The fact that the curriculum of the Sixth Form at Merchant Taylors reached so far as the Differential Calculus, had excited native proclivities. Airy, the mathematical master, said that "he had a genius for mathematics." Mathematics represented for Alfred emancipation, and he used to rejoice greatly that his father could not understand them. No! he would not be buried at Oxford under dead languages; he would run away—to be a cabin-boy at Cambridge and climb the rigging of geometry and spy out the heavens.

At this point there comes on the scene a well-disposed uncle, willing to lend him a little money (for his father was too poor to help further, when the Oxford Scholarship was abandoned)—repaid by Alfred soon after taking his degree from what he earned by teaching—which, with a Parkin's Exhibition² of £40 a year

¹ Near the end of his life A. M. wrote the following characteristic sentences about his classical studies: "When at school I was told to take no account of accents in pronouncing Greek words. I concluded that to burden my memory with accents would take up time and energy that might be turned to account; so I did not look out my accents in the dictionary; and received the only very heavy punishment of my life. This suggested to me that classical studies do not induce an appreciation of the value of time; and I turned away from them as far as I could towards mathematics. In later years I have observed that fine students of science are greedy of time: but many classical men seem to value it lightly. I will add that my headmaster was a broad-minded man; and succeeded in making his head form write Latin Essays, thought out in Latin: not thought out in English and translated into Latin. I am more grateful for that than for anything else he did for me."

² He was promoted to a Scholarship in the same year.

from St. John's College, Cambridge,¹ opened to him the doors of Mathematics and of Cambridge. Since it was a legacy of £250 from this same uncle which enabled him, fourteen years later, to pay his visit to the United States, the story of the sources of this uncle's wealth, which Alfred often told, deserve a record here. Having sought his fortunes in Australia and being established there at the date of the gold discoveries, a little family eccentricity disposed him to seek his benefit indirectly. So he remained a pastoralist, but, to the mirth of his neighbours, refused to employ anyone about his place who did not suffer from some physical defect, staffing himself entirely with the halt, the blind, and the maimed. When the gold boom reached its height, his reward came. All the able-bodied labourers migrated to the gold-fields and Charles Marshall was the only man in the place able to carry on. A few years later he returned to England with a fortune, ready to take an interest in a clever, rebellious nephew.

In 1917 Marshall put into writing the following account of his methods of work at this time and later: "An epoch in my life occurred when I was, I think, about seventeen years old. I was in Regent Street, and saw a workman standing idle before a shop-window: but his face indicated alert energy, so I stood still and watched. He was preparing to sketch on the window of a shop guiding lines for a short statement of the business concerned, which was to be shown by white letters fixed to the glass. Each stroke of arm and hand needed to be made with a single free sweep, so as to give a graceful result; it occupied perhaps two seconds of keen excitement. He stayed still for a few minutes after each stroke, so that his pulse might grow quiet. If he had saved the ten minutes thus lost, his employers would have been injured by more than the value of his wages for a whole day. That set up a train of thought which led me to the resolve never to use my mind when it was not fresh; and to regard the intervals between successive strains as sacred to absolute repose. When I went to Cambridge and became full master of myself, I resolved never to read a mathematical book for more than a quarter of an hour at a time, without a break.

¹ There is a letter from Dr. Bateson, Master of St. John's, to Dr. Hessey, Headmaster of Merchant Taylors, dated June 15, 1861, announcing this Exhibition, and giving early evidence of the interest which Dr. Bateson—like Dr. Jowett in later days—always maintained in Alfred Marshall. When A. M. applied for the Bristol appointment in 1877, Dr. Bateson wrote: "I have a great admiration for his character, which is remarkable for its great simplicity, earnestness, and self-sacrificing conscientiousness."

I had some light literature always by my side, and in the breaks I read through more than once nearly the whole of Shakespeare, Boswell's *Life of Johnson*, the *Agamemnon* of Æschylus (the only Greek play which I could read without effort), a great part of Lucretius and so on. Of course I often got excited by my mathematics, and read for half an hour or more without stopping: but that meant that my mind was intense, and no harm was done." A power of intense concentration for brief periods, combined with a lack of power of continuous concentration, was characteristic of him all his life. He was seldom able to execute at white heat any considerable piece of work. He was also bothered by the lack of a retentive memory: even as an undergraduate his mathematical book-work troubled him as much as the problems did. As a boy he had a strong arithmetical faculty, which he afterwards lost.

Meanwhile at St. John's College, Cambridge, Alfred Marshall fulfilled his ambitions. In 1865 he was Second Wrangler,¹ the year when Lord Rayleigh was Senior, and he was immediately elected to a Fellowship. He proposed to devote himself to the study of molecular physics. Meanwhile he earned his living (and repaid Uncle Charles) by becoming for a brief period a mathematical master at Clifton, under Percival, for whom he had a great veneration. A little later he returned to Cambridge and took up coaching for the Mathematical Tripos for a short time. In this way "Mathematics," he said, "had paid my arrears. I was free for my own inclinations."

The main importance of Marshall's time at Clifton was that he made friends with H. G. Dakyns, who had gone there as an assistant master on the foundation of Clifton College in 1862, and, through him, with J. R. Mozley. These friendships opened to him the door into the intellectual circle of which Henry Sidgwick was the centre. Up to this time there is no evidence of Marshall's having been in touch with the more eminent of his contemporaries, but soon after his return to Cambridge he became a member of the small, informal Discussion Society known as the "Grote Club."

The Grote Club came into existence with discussions after dinner in the Trumpington Vicarage of the Reverend John Grote, who was Knightbridge Professor of Moral Philosophy from 1855 till his death in 1866. The original members, besides Grote, were Henry Sidgwick, Aldis Wright, J. B. Mayor, and

¹ One of the famous band of Second Wranglers, which includes Whewell, Clerk Maxwell, Kelvin, and W. K. Clifford.

John Venn.¹ J. R. Mozley of King's and J. B. Pearson of St. John's joined a little later. Marshall wrote² the following account of his own connection with the Society :

“When I was admitted in 1867, the active members were Professor F. D. Maurice (Grote's successor), Sidgwick, Venn, J. R. Mozley and J. B. Pearson. . . . After 1867 or 1868 the club languished a little; but new vigour was soon imparted to it by the advent of W. K. Clifford and J. F. Moulton. For a year or two Sidgwick, Mozley, Clifford, Moulton, and myself were the active members; and we all attended regularly. Clifford and Moulton had at that time read but little philosophy; so they kept quiet for the first half-hour of the discussion, and listened eagerly to what others, and especially Sidgwick, said. Then they let their tongues loose, and the pace was tremendous. If I might have verbatim reports of a dozen of the best conversations I have heard, I should choose two or three from among those evenings in which Sidgwick and Clifford were the chief speakers. Another would certainly be a conversation at tea before a Grote Club meeting, of which I have unfortunately no record (I think it was early in 1868), in which practically no one spoke but Maurice and Sidgwick. Sidgwick devoted himself to drawing out Maurice's recollections of English social and political life in the 'thirties, 'forties, and 'fifties. Maurice's face shone out bright, with its singular holy radiance, as he responded to Sidgwick's inquiries and suggestions; and we others said afterwards that we owed all the delight of that evening to him. . . .”

It was at this time and under these influences that there came the crisis in his mental development, of which in later years he often spoke. His design to study physics was (in his own words) “cut short by the sudden rise of a deep interest in the philosophical foundation of knowledge, especially in relation to theology.”

In Marshall's undergraduate days at Cambridge a preference for Mathematics over Classics had not interfered with the integrity of his early religious beliefs. He still looked forward to ordination and his zeal directed itself at times towards the field of Foreign Missions. A missionary he remained all his life, but after a quick struggle religious beliefs dropped away, and he became, for the rest of his life, what used to be called an agnostic. Of his relationship to Sidgwick at this time, Marshall

¹ For Dr. Venn's account of early meetings, see *Henry Sidgwick : a Memoir*, p. 134.

² Printed in *Henry Sidgwick : a Memoir*, p. 137.

spoke as follows (at the meeting for a Sidgwick Memorial, Trinity Lodge, Nov. 26, 1900): "Though not his pupil in name, I was in substance his pupil in Moral Science, and I am the oldest of them in residence. I was fashioned by him. He was, so to speak, my spiritual father and mother: for I went to him for aid when perplexed, and for comfort when troubled; and I never returned empty away. The minutes that I spent with him were not ordinary minutes; they helped me to live. I had to pass through troubles and doubts somewhat similar to those with which he, with broader knowledge and greater strength, had fought his way; and perhaps of all the people who have cause to be grateful to him, none has more than I."

Marshall's Cambridge career came just at the date which will, I think, be regarded by the historians of opinion as the critical moment at which Christian dogma fell away from the serious philosophical world of England, or at any rate of Cambridge. In 1863 Henry Sidgwick, aged twenty-four, had subscribed to the Thirty-Nine Articles as a condition of tenure of his Fellowship,¹ and was occupied in reading Deuteronomy in Hebrew and preparing lectures on the Acts of the Apostles. Mill, the greatest intellectual influence on the youth of the age, had written nothing which clearly indicated any divergence from received religious opinions up to his *Examination of Hamilton* in 1865.² At about this time Leslie Stephen was an Anglican clergyman, James Ward a Nonconformist minister, Alfred Marshall a candidate for holy orders, W. K. Clifford a High Churchman. In 1869 Sidgwick resigned his Trinity Fellowship, "to free myself from dogmatic obligations." A little later none of these could have been called Christians. Nevertheless Marshall, like Sidgwick,³ was as far as possible from adopting an "anti-religious" attitude. He sympathised with Christian morals and Christian ideals and Christian incentives. There is nothing in his writings depreciating religion in any form; few of his pupils could have spoken definitely about his religious opinions. At the end of his life he said, "Religion seems to me an attitude," and that, though he had given up Theology, he believed more and more in Religion.

The great change-over of the later 'sixties was an intellectual

¹ He had decided in 1861 not to take orders.

² Mill's *Essays on Religion*, which gave his final opinions, were not published until 1874, after his death.

³ For a most interesting summary of Sidgwick's attitude in later life, see his *Memoir*, p. 505. Or see the last paragraph of W. K. Clifford's "Ethics of Religion" (*Lectures and Essays*, ii. 244) for another characteristic reaction of Marshall's generation

change, not the ethical or emotional change which belongs to a later generation, and it was a wholly intellectual debate which brought it about. Marshall was wont to attribute the beginning of his own transition of mind to the controversy arising out of H. L. Mansel's *Bampton Lectures*, which was first put into his hands by J. R. Mozley. Mansel means nothing to the present generation. But, as the protagonist of the last attempt to found Christian dogma on an intellectual basis, he was of the greatest importance in the 'sixties. In 1858 Mansel, an Oxford don and afterwards Dean of St. Paul's, "adopted from Hamilton¹ the peculiar theory which was to enlist Kant in the service of the Church of England"²—an odd tergiversation of the human mind, the influence of which was great in Oxford for a full fifty years. Mansel's Bampton Lectures of 1858 brought him to the front as an intellectual champion of orthodoxy. In 1865, the year in which Marshall took his degree and had begun to turn his mind to the four quarters of heaven, there appeared Mill's *Examination of Sir William Hamilton's Philosophy*, which included a criticism of Mansel's extension of Hamilton to Christian Theology. Mansel replied. Mansel's defence of orthodoxy "showed me," Marshall said, "how much there was to be defended." The great controversy dominated Marshall's thoughts and drove him for a time to metaphysical studies, and then onward to the social sciences.

Meanwhile in 1859, the year following the Bampton Lectures, the *Origin of Species* had appeared, to point away from heaven or the clouds to an open road on earth; and in 1860–62 Herbert Spencer's *First Principles* (unreadable as it now is), also born out of the Hamilton-Mansel controversy, took a new direction, dissolved metaphysics in agnosticism, and warned all but ingrained metaphysical minds away from a blind alley. Metaphysical agnosticism, Evolutionary progress, and—the one remnant still left of the intellectual inheritance of the previous generation—Utilitarian ethics joined to propel the youthful mind in a new direction.

From Metaphysics, therefore, Marshall turned his mind to Ethics. It would be true, I suppose, to say that Marshall never

¹ In 1836 Sir William Hamilton, having established his genealogy and made good his claim to a baronetcy, had been appointed to the Chair of Logic and Metaphysics at Edinburgh, and delivered during the next eight years the famous lectures which attempted the dangerous task of superimposing influences drawn from Kant and the German philosophers on the Scottish tradition of common sense.

² Stephen, *English Utilitarians*, iii. 382.

departed explicitly from the Utilitarian ideas which dominated the generation of economists who preceded him. But it is remarkable with what caution—in which respect he goes far beyond Sidgwick and is at the opposite pole from Jevons—he handled all such matters. There is, I think, no passage in his works in which he links economic studies to any ethical doctrine in particular. The solution of economic problems was for Marshall, not an application of the hedonistic calculus, but a prior condition of the exercise of man's higher faculties, irrespective, almost, of what we mean by "higher." The economist can claim, and this claim is sufficient for his purposes, that "the study of the causes of poverty is the study of the causes of the degradation of a large part of mankind."¹ Correspondingly, the possibility of progress "depends in a great measure upon facts and inferences, which are within the province of economics; and this it is which gives to economic studies their chief and their highest interest."² This remains true even though the question also "depends partly on the moral and political capabilities of human nature; and on these matters the economist has no special means of information; he must do as others do, and guess as best he can."³

This was his final position. Nevertheless it was only through Ethics that he first reached Economics. In a retrospect of his mental history, drawn from him towards the end of his life, he said: "From Metaphysics I went to Ethics, and thought that the justification of the existing condition of society was not easy. A friend, who had read a great deal of what are now called the Moral Sciences, constantly said: 'Ah! if you understood Political Economy you would not say that.' So I read Mill's *Political Economy* and got much excited about it. I had doubts as to the propriety of inequalities of *opportunity*, rather than of material comfort. Then, in my vacations I visited the poorest quarters of several cities and walked through one street after another, looking at the faces of the poorest people. Next, I resolved to make as thorough a study as I could of Political Economy."

His passage into Economics is also described in his own words in some pages,⁴ written about 1917 and designed for the Preface to *Money, Credit and Commerce*: "About the year 1867

¹ *Principles* (1st ed.), pp. 3, 4.

² *Ibid.*

³ *Ibid.*

⁴ Rescued by Mrs. Marshall from the waste-paper basket, whither too great a proportion of the results of his mental toil found their way; like his great-great-uncle, the Reverend Richard Marshall, who is said to have been a good poet and was much pressed to publish his compositions, to which, however, he had so great an objection that lest it be done after his death, he burnt all his papers.

(while mainly occupied with teaching Mathematics at Cambridge), Mansel's *Bampton Lectures* came into my hands and caused me to think that man's own possibilities were the most important subject for his study. So I gave myself for a time to the study of Metaphysics; but soon passed to what seemed to be the more progressive study of Psychology. Its fascinating inquiries into the possibilities of the higher and more rapid development of human faculties brought me into touch with the question: how far do the conditions of life of the British (and other) working classes generally suffice for fullness of life? Older and wiser men told me that the resources of production do not suffice for affording to the great body of the people the leisure and the opportunity for study; and they told me that I needed to study Political Economy. I followed their advice, and regarded myself as a wanderer in the land of dry facts; looking forward to a speedy return to the luxuriance of pure thought. But the more I studied economic science, the smaller appeared the knowledge which I had of it, in proportion to the knowledge that I needed; and now, at the end of nearly half a century of almost exclusive study of it, I am conscious of more ignorance of it than I was at the beginning of the study."

In 1868, when he was still in his metaphysical stage, a desire to read Kant in the original led him to Germany. "Kant my guide," he once said, "the only man I ever worshipped: but I could not get further: beyond seemed misty, and social problems came imperceptibly to the front. Are the opportunities of real life to be confined to a few?" He lived at Dresden with a German Professor who had previously coached Henry Sidgwick.¹ Hegel's *Philosophy of History* greatly influenced him. He also came in contact with the work of the German economists, particularly Roscher. Finally Dr. Bateson, the Master of St. John's, was instrumental in giving him a career in life by persuading the College to establish for him a special lectureship in Moral Science.² He soon settled down to Economics, though for a time he gave

¹ He was again in Germany, living in Berlin, in the winter of 1870-71, during the Franco-German War.

² In a conversation I had with him a few weeks before his death he dwelt especially on Hegel's *Philosophy of History* and the friendly action of Dr. Bateson as finally determining the course of his life. Since J. B. Mayor, the first "Moral Science lecturer" in Cambridge, had held a similar lectureship at St. John's for some time, whilst the Rev. J. B. Pearson was also a Johnian and a moral scientist, the appointment of another lecturer in the subject was a somewhat unusual step. Henry Sidgwick had been appointed to a lectureship in Moral Science at Trinity in the previous year, 1867; and Venn had come back to Cambridge as a Moral Science lecturer at Caius in 1862.

short courses on other branches of Moral Science—on Logic and on Bentham.¹

His dedication to economic study—for so he always considered it, not less ordained in spirit than if he had fulfilled his father's desire—was now effected. His two years of doubt and disturbance of mind left on his imagination a deep impression, to which in later years he would often recur with pupils whom he deemed worthy of the high calling—for so he reckoned it—of studying with scientific disinterestedness the modes and principles of the daily business of life, by which human happiness and the opportunities for good life are, in great measure, determined.

Before we leave the early phase, when he was not yet an economist, we may pause a moment to consider the colour of his outlook on life, as, at that time, it was already fixed in him.

Like his two colleagues, Henry Sidgwick and James Ward, in the Chairs of the Moral Sciences at Cambridge during the last decades of the nineteenth century, Alfred Marshall belonged to the tribe of sages and pastors; yet, like them also, endowed with a double nature, he was a scientist too. As a preacher and pastor of men he was not particularly superior to other similar natures. As a scientist he was, within his own field, the greatest in the world for a hundred years. Nevertheless it was to the first side of his nature that he himself preferred to give the pre-eminence. This self should be master, he thought; the second self, servant. The second self sought knowledge for its own sake; the first self subordinated abstract aims to the need for practical advancement. The piercing eyes and ranging wings of an eagle were often called back to earth to do the bidding of a moraliser.

This double nature was the clue to Marshall's mingled strength and weakness; to his own conflicting purposes and waste of strength; to the two views which could always be taken about him; to the sympathies and antipathies he inspired.

In another respect the diversity of his nature was pure advantage. The study of economics does not seem to require any specialised gifts of an unusually high order. Is it not, intellectually regarded, a very easy subject compared with the higher branches of philosophy and pure science? Yet good, or even competent, economists are the rarest of birds. An easy subject,

¹ Mrs. Marshall remembers how in the early seventies at Newnham, Mary Kennedy (Mrs. R. T. Wright) and she had to write for him "a dialogue between Bentham and an Ascetic."

at which very few excel! The paradox finds its explanation, perhaps, in that the master-economist must possess a rare *combination* of gifts. He must reach a high standard in several different directions and must combine talents not often found together. He must be mathematician, historian, statesman, philosopher—in some degree. He must understand symbols and speak in words. He must contemplate the particular in terms of the general, and touch abstract and concrete in the same flight of thought. He must study the present in the light of the past for the purposes of the future. No part of man's nature or his institutions must lie entirely outside his regard. He must be purposeful and disinterested in a simultaneous mood; as aloof and incorruptible as an artist, yet sometimes as near the earth as a politician. Much, but not all, of this ideal many-sidedness Marshall possessed. But chiefly his mixed training and divided nature furnished him with the most essential and fundamental of the economist's necessary gifts—he was conspicuously historian and mathematician, a dealer in the particular and the general, the temporal and the eternal, at the same time.

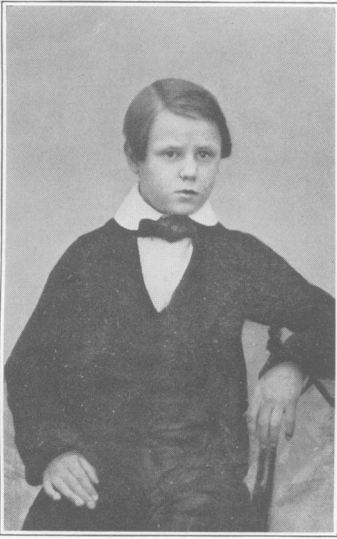
III

The task of expounding the development of Marshall's Economics is rendered difficult by the long intervals which generally separated the initial discovery and its oral communication to pupils from the final publication in a book to the world outside. Before attempting this, it will be convenient to trace briefly the outward course of his life from his appointment to a lectureship at St. John's College, Cambridge, in 1868 to his succession to the Chair of Political Economy in Cambridge in 1885.

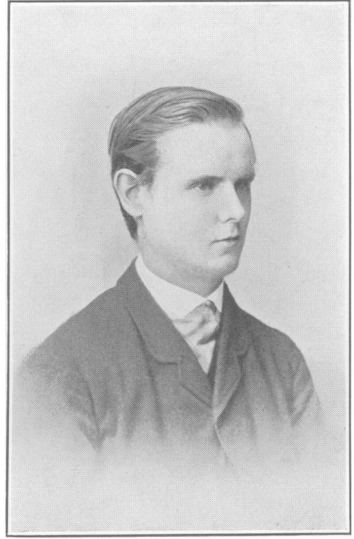
For nine years Marshall remained Fellow and Lecturer of St. John's, laying the foundations of his subject but publishing nothing.¹ After his introduction to the Grote Club he was particularly intimate with W. K. Clifford² and Fletcher Moulton. Clifford was chief favourite, though "he was too fond of astonishing people." As a member, a little later on, of the "Eranus" he was in touch with Sidgwick, Venn, Fawcett, Henry Jackson and other leaders of that first age of the emancipation of Cambridge.

¹ The occasional articles belonging to this period are included in the Bibliography below.

² Clifford, who was three years Marshall's junior, came up to Trinity in 1863, was elected to a Fellowship in 1868, and resided in Cambridge, where his rooms were "the meeting point of a numerous body of friends" (*vide* Sir F. Pollock's Memoir), until 1871.



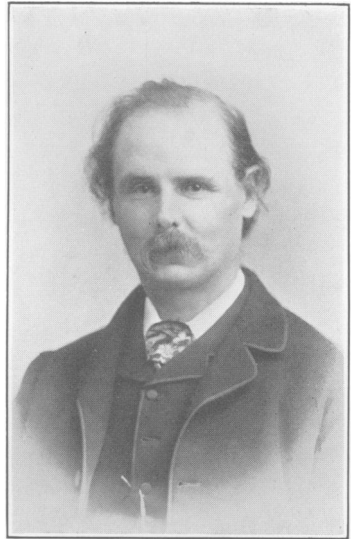
1855.



1869.



(With Mrs. Marshall) 1877.



1892.

ALFRED MARSHALL.

At this time he used to go abroad almost every long vacation. Mrs. Marshall writes :

“ He took with him £60¹ and a knapsack, and spent most of the time walking in the high Alps. This walking, summer after summer, turned him from a weak into a strong man. He left Cambridge early in June jaded and overworked and returned in October brown and strong and upright. Carrying the knapsack pulled him upright, and until he was over eighty he remained so. He even then exerted himself almost painfully to hold himself straight. When walking in the Alps his practice was to get up at six and to be well on his way before eight. He would walk with knapsack on his back for two or three hours. He would then sit down, sometimes on a glacier, and have a long pull at some book—Goethe or Hegel or Kant or Herbert Spencer—and then walk on to his next halting-place for the night. This was in his philosophic stage. Later on he worked out his theories of Domestic and Foreign Trade in these walks. A large box of books, etc., was sent on from one stage to another, but he would go for a week or more just with a knapsack. He would wash his shirt by holding it in a fast-running stream and dry it by carrying it on his alpenstock over his shoulder. He did most of his hardest thinking in these solitary Alpine walks.

“ These *Wanderjahre* gave him a love for the Alps which he always retained, and even in 1920 (for the last time) we went to the South Tyrol, where he sat and worked in the high air.

“ Alfred always did his best work in the open air. When he became Fellow of St. John's he did his chief thinking between 10 a.m. and 2 p.m. and between 10 p.m. and 2 a.m. He had a monopoly of the Wilderness in the daytime and of the New Court Cloisters at night. At Palermo in the early eighties he worked on the roof of a quiet hotel, using the cover of the bath as an awning. At Oxford he made a ‘Den’ in the garden in which he wrote. At Cambridge he worked in the balcony, and later in a large revolving shelter, fitted up as a study, called ‘The Ark,’ and in the Tyrol he arranged a heap of stones, a camp stool and an air cushion into what he called a ‘throne,’ and in later years we always carried a tent shelter with us, in which he spent the day.”

In 1875 Marshall visited the United States for four months.

¹ He used to reckon that his necessary expenditure as a bachelor Fellow amounted to £300 a year, including £60 for vacation travel.

He toured the whole of the East, and travelled as far as San Francisco. At Harvard and Yale he had long talks with the academic economists, and he had many introductions everywhere to leading citizens. But his chief purpose was the "study of the Problem of Protection in a New Country." About this he inquired on all hands, and towards the end of his trip was able to write in a letter home: "In Philadelphia I spent many hours in conversation with the leading protectionists. And now I think, as soon as I have read some books they have recommended me to read, I shall really know the whole of their case; and I do not believe there is or ever has been another Englishman who could say the same."

On his return to England he read a paper at the Cambridge Moral Science Club on American Industry, Nov. 17, 1875, and later on he lectured at Bristol, in 1878, on "The Economic Condition of America." The American trip made on him a great impression, which coloured all his future work. He used to say that it was not so much what he actually learnt, as that he got to know what things he wanted to learn; that he was taught to see things in proportion; and that he was enabled to expect the coming supremacy of the United States, to know its causes and the directions it would take.

Meanwhile he had been helping Fawcett, who was Professor, and Henry Sidgwick, to establish Political Economy as a serious study in the University of Cambridge. Two of his earliest pupils, H. S. Foxwell and, later on, my father, John Neville Keynes, who took the Moral Sciences Tripos in 1875, joined these three as lecturers on Political Economy in the University.

In 1876 Alfred Marshall became engaged to Miss Mary Paley, a great-granddaughter of the famous Archdeacon. Miss Paley was a former pupil of his and was a lecturer in Economics at Newnham.¹ His first book, *Economics of Industry*, published in 1879, was written in collaboration with her; indeed it had been, at the start, her book and not his, having been undertaken by her at the request of a group of Cambridge University Extension lecturers. They were married in 1877. During forty-seven years of married life his dependence upon her devotion was complete. Her life was given to him and to his work with a

¹ Miss Paley was one of the small band of five pioneers who, before the foundation of Newnham College, came into residence under Miss Clough in 1871 at 74 Regent Street, which had been taken and furnished for the purpose by Henry Sidgwick. She and Miss Bulley, taking the Moral Sciences Tripos in 1874 as Students of the "Association for Promoting the Higher Education of Women in Cambridge," were the first of the group to take honours at Cambridge.

degree of unselfishness and understanding that makes it difficult for friends and old pupils to think of them separately or to withhold from her shining gifts of character a big share in what his intellect accomplished.

Marriage, by involving the loss of his Fellowship, meant leaving Cambridge for a time,¹ and Marshall went to Bristol as the first Principal of University College, and as Professor of Political Economy. "Just at that time," Marshall has recorded, "Balliol and New Colleges at Oxford were setting up at Bristol the first 'University College': that is, a College designed to bring higher educational opportunities within the reach of the inhabitants of a large city, which had no University of its own. I was elected its first Principal: my wife lectured on Political Economy to a class consisting chiefly of ladies in the morning, and I lectured in the evening to a class composed chiefly of young business men." Apart from his regular classes he gave a number of public evening lectures (references to some of which will be found in the Bibliographical Note below²), including a series on Henry George's *Progress and Poverty*. The work of the Marshalls at Bristol was much appreciated there, and the town kept up an interest in his career long after he had left it. But the administrative work, especially the business of begging money, which in view of the meagre endowments of the college was one of the main duties of the Principal, proved irksome and uncongenial. Soon after his marriage his health and nerves began to break down, chiefly as a result of stone in the kidney. He was anxious to resign the position of Principal, but there was no convenient opportunity until 1881, when the appointment of Professor Ramsay to the Department of Chemistry provided a suitable successor. He went with his wife to Italy for nearly a year, working quietly on the roof of a small hotel at Palermo for five months and then moving to Florence and to Venice. He came back to Bristol, where he was still Professor of Political Economy, in 1882 with his health much restored; but he remained for the rest of his life somewhat hypochondriacal and inclined to consider himself on the verge of invalidism. In fact, his constitution was extremely tough and he remained in harness as a writer up to a very advanced age. But his nervous

¹ For a week or two Marshall entertained the idea of becoming a candidate for the Esquire Bedellship at Cambridge, as a help towards keeping himself. But "the more I look at the poker," he finally concluded, "the less I like it." He was actually, for a short time, Steward of St. John's.

² The lecture on "Water as an Element of National Wealth" is particularly interesting.

equilibrium was easily upset by unusual exertion or excitement or by controversy and difference of opinion; his power of continuous concentration on difficult mental work was inferior to his wishes; and he became dependent on a routine of life adapted even to his whims and fancies. In truth he was haunted by a feeling that his physical strength and power of continuous concentration were inferior to the fields of work which he saw stretching ahead, and to the actual constructions he had conceived but not yet given to the world. By 1877, when he was thirty-five years of age, he had worked out within him the foundations of little less than a new science, of great consequence to mankind; and a collapse of health and strength during the five years following, when he should have been giving all this to the world, partly broke his courage, though not his determination.

Amongst the Governors of University College, Bristol, were Dr. Jowett, the Master of Balliol, and Professor Henry Smith, and these two were accustomed to stay with the Marshalls on their periodic visits to Bristol. Jowett's interest in Economics was always lively. While Tutor of Balliol he had given courses of set lectures on Political Economy, and he continued to direct individual undergraduates in the subject up to the end of his life.¹ Jowett's interest and belief in Alfred Marshall were keenly aroused by the long evening talks which followed the meetings of the Governing Body; and, on the premature death of Arnold Toynbee in 1883, he invited Marshall to take his place as Fellow of Balliol and Lecturer in Political Economy to the selected candidates for the Indian Civil Service.²

Marshall's Oxford career was brief but successful. He attracted able pupils, and his public lectures were attended by larger and more enthusiastic classes than at any other period of his life. He encountered with credit, on different occasions,

¹ In the charming little obituary of Jowett which Marshall contributed to the *ECONOMIC JOURNAL* (Vol. III., p. 745), he wrote: "He took part in most of the questions which agitate modern economists; but his own masters were Plato and Ricardo. Everything that they said, and all that rose directly out of what they said, had a special interest for him. . . . In pure economics his favourite subject was the Currency, and he took a keen interest in the recent controversy on it. His views were generally conservative; and he was never converted to bimetallism. But he was ready to follow wherever Ricardo had pointed the way; and in a letter written not long ago he raised the question whether the world would not outgrow the use of gold as its standard of value, and adopt one of those artificial standards which vex the soul of Mr. Giffen."

² Jowett always remained very fond of Alfred Marshall, and, after the Marshalls left Oxford, it was with them that he generally stayed on his visits to Cambridge.

Henry George and Hyndman in public debate, and was taking a prominent position in the University. In November 1884, however, Fawcett died, and in January 1885 Marshall returned to Cambridge as Professor of Political Economy.

IV

Marshall's serious study of Economic Theory began in 1867; his characteristic doctrines were far developed by 1875; and by 1883 they were taking their final form. Nevertheless no part of his work was given to the world at large in adequate shape until 1890 (*Principles of Economics*), and that part of the subject, at which he had worked earliest and which was most complete by 1875, was not treated in a published book until nearly fifty years later, in 1923 (*Money, Credit and Commerce*). Meanwhile he had not kept his ideas to himself, but had shared them without reserve in lecture and in talk with friends and pupils. They leaked out to wider circles in privately printed pamphlets and through the writings of his pupils, and were extracted in cross-examination by Royal Commissions. Inevitably when the books themselves appeared, they lacked the novelty and path-breaking powers which would have been acclaimed in them a generation earlier, and those economists all over the world who know Marshall only by his published work may find it difficult to understand the extraordinary position claimed for him by his English contemporaries and successors. It is proper, therefore, that I should make an attempt, necessarily imperfect from lack of full data, to trace the progress of his ideas; and then to set forth the reasons or the excuses for the unhappy delay in their publication.

Marshall's serious study of Economics began in 1867. To fix our ideas of date: Mill's *Political Economy*¹ had appeared in 1848; the seventh edition, in 1871, was the last to receive Mill's own corrections; and Mill died in 1873. *Das Kapital* of Marx appeared in 1868; Jevons' *Theory of Political Economy*²

¹ What a contrast to Marshall's *Principles* the drafting of this famous book presents! Mill's *Political Economy* was commenced in the autumn of 1845 and was ready for the press before the end of 1847. In this period of little more than two years the work was laid aside for six months while Mill was writing articles in the *Morning Chronicle* (sometimes as many as five a week) on the Irish Peasant problem. At the same time Mill was occupied all day in the India Office. (See Mill's *Autobiography*.)

² Jevons' *Serious Fall in the Value of Gold ascertained, and its Social Effects set forth*, had appeared in 1863 and his *Variation of Prices* in 1865, from which two papers the modern method of Index Numbers takes its rise. His main papers on the Periodicity of Commercial Crises were later (1875-1879).

in 1871; Menger's *Grundsätze der Volkswirtschaftslehre*, also in 1871; Cairnes' *Leading Principles* in 1874.

Thus when Marshall began, Mill and Ricardo still reigned supreme and unchallenged. Roscher, of whom Marshall often spoke, was the only other influence of importance. The notion of applying mathematical methods was in the air. But it had not yet yielded anything substantial. Cournot's *Principes Mathématiques de la Théorie des Richesses* (1835) is mentioned by Marshall in the Preface to the first edition of the *Principles of Economics* as having particularly influenced him; but I do not know at what date this book first came into his hands.¹ This, and the natural reaction of Ricardo on a Cambridge mathematician of that date,² with perhaps some hints of algebraical treatment in the arithmetical examples of Mill's Book III. chapter xviii,³ on "International Values," were all that Marshall had to go upon in the first instance. An account of the progress of his thought from 1867 to his American trip in 1875, which Marshall himself put into writing,⁴ is appropriate at this point:—

"While still giving private lessons in mathematics,⁵ he translated as many as possible of Ricardo's reasonings into mathematics; and he endeavoured to make them more general. Meanwhile he was attracted towards the new views of economics taken by Roscher and other German economists; and by Marx, Lassalle and other Socialists. But it seemed to him that the analytical methods of the historical economists were not

¹ For a complete bibliography of early hints and foreshadowings of mathematical treatment see the appendix to Irving Fisher's edition of Cournot's book. Fleeming Jenkin's brief paper of 1868 was not generally available until 1870, but was certainly known to Marshall about that date (see his review of Jevons in *The Academy*, 1872). Jevons' *Brief Account of a General Mathematical Theory of Political Economy* was presented to the Cambridge Meeting of the British Association in 1862 and published in the *Statistical Journal* in 1866; but this paper does not actually contain any mathematical treatment at all. Its purpose is to adumbrate the idea of "the coefficient of utility" (*i.e.* final utility), and to claim that this notion will allow the foundations of economics to be worked out as a mathematical extension of the hedonistic calculus.

² This was the age of Clerk Maxwell and W. K. Clifford, when the children of the Mathematical Tripos were busy trying to apply its apparatus to the experimental sciences. An extension to the moral sciences was becoming obvious. Boole and Leslie Ellis, a little earlier, were an important influence in the same direction. Alfred Marshall, in 1867, trained as he was, an intimate of W. K. Clifford, turning his attention to Ricardo, was *bound* to play about with diagrams and algebra. No other explanations or influences are needed.

³ Particularly §§ 6–8, which were added by Mill to the third edition (1852).

⁴ This account was contributed by him to a German compilation of Portraits and Short Lives of leading Economists.

⁵ 1867.

always sufficiently thorough to justify their confidence that the causes which they assigned to economic events were the true causes. He thought indeed that the interpretation of the economic past was almost as difficult as the prediction of the future. The Socialists also seemed to him to underrate the difficulty of their problems, and to be too quick to assume that the abolition of private property would purge away the faults and deficiencies of human nature. . . . He set himself to get into closer contact with practical business and with the life of the working classes. On the one side he aimed at learning the broad features of the technique of every chief industry; and on the other he sought the society of trade unionists, co-operators and other working-class leaders. Seeing, however, that direct studies of life and work would not yield much fruit for many years, he decided to fill the interval by writing a separate monograph or special treatise on Foreign Trade; for the chief facts relating to it can be obtained from printed documents. He proposed that this should be the first of a group of monographs on special economic problems; and he hoped ultimately to compress these monographs into a general treatise of a similar scope to Mill's. After writing that larger treatise, but not before, he thought he might be ready to write a short popular treatise. He has never changed his opinion that this is the best order of work; but his plans were overruled, and almost inverted, by the force of circumstances. He did indeed write the first draft of a monograph on Foreign Trade; and in 1875 he visited the chief seats of industry in America with the purpose of studying the problem of Protection in a new country. But this work was suspended by his marriage; and while engaged, in conjunction with his wife, in writing a short account of the Economics of Industry, forcibly simplified for working-class readers, he contracted an illness so serious that for some time he appeared unlikely to be able to do any more hard work. A little later he thought his strength might hold out for recasting his diagrammatic illustrations of economic problems. Though urged by the late Professor Walras about 1873 to publish these, he had declined to do so; because he feared that if separated from all concrete study of actual conditions, they might seem to claim a more direct bearing on real problems than they in fact had. He began, therefore, to supply some of the requisite limitations and conditions, and thus was written the kernel of the fifth book of his *Principles*. From that kernel the present volume

was extended gradually backwards and forwards, till it reached the form in which it was published in 1890."

The fateful decision was the abandonment of the project to write "a group of monographs on special economic problems" in favour of a comprehensive treatise which should be born complete and fully-armed from the head of an economic Jove;—particularly when the special problems on which Marshall had worked first, Money and Foreign Trade, were held to occupy, logically, the latest sections of this treatise, with the result that they did not see the light for fifty years.

The evidence as to the order of his studies is as follows: In 1867 he began with the development of diagrammatic methods, with special regard to the problems of foreign trade, mainly under the influence of Ricardo and Mill. To this was added the influence of Cournot, and in a less degree that of von Thünen, by which he "was led to attach great importance to the fact that our observations of nature, in the moral as in the physical world, relate not so much to aggregate quantities, as to increments of quantities, and that in particular the demand for a thing is a continuous function, of which the 'marginal' increment is, in stable equilibrium, balanced against the corresponding increment of its cost of production. It is not easy to get a clear full view of Continuity in this aspect without the aid either of mathematical symbols or of diagrams."¹

By 1871 his progress along these lines was considerably advanced. He was expounding the new ideas to pupils and the foundations of his diagrammatic economics had been truly laid. In that year there appeared, as the result of independent work, Jevons' *Theory of Political Economy*. The publication of this book must have been an occasion of some disappointment and annoyance to Marshall. It took the cream of novelty off the new ideas which Marshall was slowly working up, without giving them—in Marshall's judgment—adequate or accurate treatment. Nevertheless it undoubtedly gave Jevons priority of publication as regards the group of ideas connected with "marginal" (or, as Jevons called it, "final") utility. Marshall's references to the question of priority are extremely reserved. He is careful to leave Jevons' claim undisputed, whilst pointing out, indirectly, but quite clearly and definitely, that his own work owed little or nothing to Jevons.²

¹ Preface to 1st edition of *Principles of Economics*.

² See, particularly, (1) his footnote relating to his use of the term "marginal" (Preface to *Principles*, 1st ed.), where he implies that the word was suggested to

In 1872 Marshall reviewed¹ Jevons' *Political Economy in The Academy*. This review,² while not unfavourable, is somewhat cool and it points out several definite errors. "The main value of the book," it concludes, "does not lie in its more prominent theories, but in its original treatment of a number of minor points, its suggestive remarks and careful analyses. We continually meet with old friends in new dresses. . . . Thus it is a familiar truth that the total utility of any commodity is not proportional to its final degree of utility. . . . But Prof. Jevons has made this the leading idea of the costume in which he has displayed a large number of economic facts." When, however, Marshall came, in later years, to write the *Principles* his desire to be scrupulously fair to Jevons and to avoid the least sign of jealousy is very marked. It is true that in one passage³ he writes: "It is unfortunate that here as elsewhere Jevons' delight in stating his case strongly has led him to a conclusion, which not only is inaccurate, but does mischief. . . ." But he says elsewhere:⁴ "There are few writers of modern times who have approached as near to the brilliant originality of Ricardo as Jevons has done," and "There are few thinkers whose claims on our gratitude are as high and as various as those of Jevons."

In truth, Jevons' *Theory of Political Economy* is a brilliant, but hasty, inaccurate and incomplete *brochure*, as far removed

him, as a result of reading von Thünen (though von Thünen does not actually use the word), before Jevons' book appeared (in his British Association paper of 1862, published in 1866, Jevons uses the term "coefficient of utility"), that, after its appearance, he temporarily deferred to Jevons and adopted his word "final" (e.g. in the first *Economics of Industry*), and that later on he reverted to his original phrase as being the better (it is also an almost literal equivalent of Menger's word "Grenznutzen"); and (2) his footnote to Book III. chap. vi. § 3 on Consumers' Rent (or Surplus) where he writes (my italics): "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."

¹ I believe that Marshall only wrote two reviews in the whole of his life—this review of Jevons in 1872, and a review of Edgeworth's *Mathematical Psychics* in 1881.

² The main interest of the review, which is, so far as I am aware, A. M.'s first appearance in print (at thirty years of age), is, perhaps, the many respects in which it foreshadows Marshall's permanent attitude to his subject.

³ p. 166 (3rd ed.).

⁴ In the *Note on Ricardo's Theory of Value*, which is, in the main, a reply to Jevons.

as possible from the painstaking, complete, ultra-conscientious, ultra-unsensational methods of Marshall. It brings out unforgettably the notions of final utility and of the balance between the disutility of labour and the utility of the product. But it lives merely in the tenuous world of bright ideas,¹ when we compare it with the great working machine evolved by the patient, persistent toil and scientific genius of Marshall. Jevons saw the kettle boil and cried out with the delighted voice of a child; Marshall too had seen the kettle boil and sat down silently to build an engine.

Meanwhile Marshall worked on at the generalised diagrammatic scheme, disclosed in his papers on the Pure Theory of Foreign Trade and Domestic Values. These must have been substantially complete about 1873 and were communicated to his pupils (particularly to Sir H. H. Cunynghame) about that date. They were drafted as non-consecutive² chapters of *The Theory of Foreign Trade, with some Allied Problems relating to the Doctrine of Laissez Faire*, which he nearly completed in 1875-7 after his return from America, embodying the results of his work from 1869 onwards.³ In 1877 he turned aside to write the *Economics of Industry*, with Mrs. Marshall. In 1879 Henry Sidgwick, alarmed at the prospect of Marshall's right of priority being taken from him, printed them for private circulation and copies were sent to leading economists at home and abroad.⁴ These chapters, which are now very scarce, have never been published to the world at large, but the most significant parts of them were incorporated in Book V. chaps. xi. and xii. of the *Principles of Economics*, and (fifty years after their origination) in Appendix J of *Money Credit and Commerce*.

Marshall's mathematical and diagrammatic exercises in Economic Theory were of such a character in their grasp, comprehensiveness and scientific accuracy and went so far beyond the "bright ideas" of his predecessors, that we may justly claim him as the founder of modern diagrammatic economics—that elegant apparatus which generally exercises a powerful attraction

¹ How disappointing are the fruits, now that we have them, of the bright idea of reducing Economics to a mathematical application of the hedonistic calculus of Bentham!

² The last proposition of *Foreign Trade* (which comes first) is Prop. XIII.; the first of *Domestic Values* is Prop. XVII.

³ "Chiefly between 1869 and 1873"—see *Money Credit and Commerce*, p. 330.

⁴ See the Preface to the first edition of the *Principles*. Jevons refers to them in the 2nd edition of his *Theory*, published in 1879; and Pantaleoni reproduced much of them in his *Principii di Economia Pura* (1889).

on clever beginners, which all of us use as an inspirer of, and a check on, our intuitions and as a shorthand record of our results, but which generally falls into the background as we penetrate further into the recesses of the subject. The fact that Marshall's results percolated to the outer world a drop at a time and reached in their complete form only a limited circle, lost him much international fame, which would otherwise have been his, and even, perhaps, retarded the progress of the subject. Nevertheless we can, I think, on reflection understand Marshall's reluctance to open his career with publishing his diagrammatic apparatus by itself.

For, whilst it was a necessary appurtenance of his intellectual approach to the subject, an appearance of emphasising or exalting such methods pointed right away from what he regarded, quite early in his life, as the proper attitude to economic inquiry. Moreover, Marshall, as one who had been Second Wrangler and had nourished ambitions to explore molecular physics, always felt a slight contempt from the intellectual or æsthetic point of view for the rather "potty" scraps of elementary algebra, geometry, and differential calculus which make up mathematical economics.¹ Unlike physics, for example, such parts of the bare bones of economic theory as are expressible in mathematical form are extremely easy compared with the economic interpretation of the complex and incompletely known facts of experience,² and lead one but a very little way towards establishing useful results.

Marshall felt all this with a vehemence which not all his pupils have shared. The preliminary mathematics was for him child's-play. He wanted to enter the vast laboratory of the

¹ Mathematical economics often exercise an excessive fascination and influence over students who approach the subject without much previous training in technical mathematics. They are so easy as to be within the grasp of almost anyone, yet do introduce the student, on a small scale, to the delights of perceiving constructions of pure form, and place toy bricks in his hands that he can manipulate for himself, which gives a new thrill to those who have had no glimpse of the sky-scraping architecture and minutely embellished monuments of modern mathematics.

² Professor Planck of Berlin, the famous originator of the Quantum Theory, once remarked to me that in early life he had thought of studying economics, but had found it too difficult! Professor Planck could easily master the whole corpus of mathematical economics in a few days. He did not mean that! But the amalgam of logic and intuition and the wide knowledge of facts, most of which are not precise, which is required for economic interpretation in its highest form, is, quite truly, overwhelmingly difficult for those whose gift mainly consists in the power to imagine and pursue to their furthest points the implications and prior conditions of comparatively simple facts which are known with a high degree of precision.

world, to hear its roar and distinguish the several notes, to speak with the tongues of business men, and yet to observe all with the eyes of a highly intelligent angel. So "he set himself," as is recorded in his own words above (p. 329), "to get into closer contact with practical business and with the life of the working classes."

Thus Marshall, having begun by founding modern diagrammatic methods, ended by using much self-obliteration to keep them in their proper place. When the *Principles* appeared, the diagrams were imprisoned in footnotes, or, at their freest, could but exercise themselves as in a yard within the confines of a brief Appendix. As early as 1872, in reviewing Jevons' *Political Economy*, he wrote: "We owe several valuable suggestions to the many investigations in which skilled mathematicians, English and continental, have applied their favourite method to the treatment of economical problems. But all that has been important in their reasonings and results has, with scarcely an exception, been capable of being described in ordinary language. . . . The book before us would be improved if the mathematics were omitted, but the diagrams retained." In 1881, reviewing Edgeworth's *Mathematical Psychics*, after beginning "This book shows clear signs of genius, and is a promise of great things to come," he adds, "It will be interesting, in particular, to see how far he succeeds in preventing his mathematics from running away with him, and carrying him out of sight of the actual facts of economics." And finally, in 1890, in the Preface to the *Principles*, he first emphasises his preference for diagrams over algebra, then allows the former a limited usefulness,¹ and reduces the latter to the position of a convenience for private use.²

In his reaction against excessive addiction to these methods, and also (a less satisfactory motive) from fear of frightening "business men" away from reading his book, Marshall may have gone too far. After all, if "there are many problems of pure theory, which no one who has once learnt to use diagrams

¹ "The argument in the text is never dependent on them; and they may be omitted; but experience seems to show that they give a firmer grasp of many important principles than can be got without their aid; and that there are many problems of pure theory, which no one who has once learnt to use diagrams will willingly handle in any other way."

² "The chief use of pure mathematics in economic questions seems to be in helping a person to write down quickly, shortly and exactly, some of his thoughts for his own use. . . . It seems doubtful whether anyone spends his time well in reading lengthy translations of economic doctrines into mathematics, that have not been made by himself."

will willingly handle in any other way," such diagrams must surely form a part of every advanced course in economics,¹ and they should be available for students in the fullest and clearest form possible.²

Whilst, however, Marshall's reluctance to print the results of his earliest investigations is mainly explained by the profundity of his insight into the true character of his subject in its highest and most useful developments, and by his unwillingness to fall short of his own ideals in what he gave to the world, it was a great pity that *The Theory of Foreign Trade, with some Allied Problems relating to the Doctrine of Laisser Faire*, did not see the light in 1877, even in an imperfect form.³ After all, he had originally embarked on this particular inquiry because, in this case, "the chief facts relating to it can be obtained from printed documents"; and these facts, supplemented by those which he had obtained first-hand during his visit to the United States about the actual operation of Protection in a new country, might have been deemed sufficient for a monograph. The explanation is partly to be found in the fact that, when his health broke down, he believed that he had only a few years to live and that these must be given to the working out of his fundamental ideas on Value and Distribution.

We must regret still more Marshall's postponement of the publication of his *Theory of Money* until extreme old age, when time had deprived his ideas of freshness and his exposition of sting and strength. There is no part of Economics where Marshall's originality and priority of thought are more marked than here, or where his superiority of insight and knowledge over his contemporaries was greater. There is hardly any leading

¹ Marshall himself always used them freely in his lectures.

² Two former pupils of Marshall's, Sir Henry Cunynghame and Mr. A. W. Flux, have done something to supply the want. But we still, after fifty years, lack the ideal text-book for this purpose. Professor Bowley's lately published *Mathematical Groundwork of Economics* runs somewhat counter to Marshall's precepts by preferring, on the whole, algebraical to diagrammatic methods.

³ Indeed, it is not very clear why he abandoned the publication of this book. Certainly up to the middle of 1877 he still intended to publish it. My father noted in his diary on Feb. 8, 1877: "Marshall has brought me part of the MS. of a book on foreign trade that he is writing, for me to look over." Both Sidgwick and Jevons had also read it in manuscript, and had formed a high opinion of it, as appears from their testimonials written in June, 1877, when Marshall was applying for the Bristol appointment. Sidgwick wrote: "I doubt not that his forthcoming work, of which the greater part is already completed, will give him at once a high position among living English economists." And Jevons: "Your forthcoming work on the theory of Foreign Trade is looked forward to with much interest by those acquainted with its contents, and will place you among the most original writers on the science."

feature in the modern Theory of Money which was not known to Marshall forty years ago. Here too was a semi-independent section of the subject ideally suited to separate treatment in a monograph. Yet apart from what is embedded in his evidence before Royal Commissions and occasional articles, not one single scrap was given to the world in his own words and his own atmosphere at the right time. Since *Money* was from the early seventies onwards one of his favourite topics for lectures, his main ideas became known to pupils in a general way,¹ with the result that there grew up at Cambridge an oral tradition, first from Marshall's own lectures and since his retirement from those of Professor Pigou, different from, and (I think it may be claimed) superior to, anything that could be found in printed books until recently.² It may be convenient at this point to attempt a brief summary of Marshall's main contributions to Monetary Theory.

Marshall printed nothing whatever on the subject of Money³ previously to the Bimetallic controversy, and even then he waited a considerable time before he intervened. His first serious contribution to the subject was contained in his answers to a questionnaire printed by the Royal Commission on the Depression of Trade and Industry in 1886. This was followed by his article on "Remedies for Fluctuations of General Prices" in the *Contemporary Review* for March 1887; and a little later by his voluminous evidence before the Gold and Silver Commission in 1887 and 1888. In 1899 came his evidence before the Indian Currency Committee. But his theories were not expounded in a systematic form until the appearance of *Money Credit and Commerce* in 1923. By this date nearly all his main ideas had found expression in the works of others. He had passed his eightieth year; his strength was no longer equal to much more than piecing together earlier fragments; and its jejune treatment, carefully avoiding difficulties and complications, yields the mere shadow of what he had had it in him to bring forth twenty⁴ or (better) thirty years earlier. It happens,

¹ His unsystematic method of lecturing prevented the average, and even the superior, student from getting down in his notes anything very consecutive or complete.

² Professor Irving Fisher has been the first, in several instances, to publish in book-form ideas analogous to those which had been worked out by Marshall at much earlier dates.

³ The *Economics of Industry* (1879) was not intended to cover this part of the subject and contains only a brief reference to it. The references to the Trade Cycle in this book are, however, important.

⁴ I can speak on this matter from personal recollection, since it was only a little later than this (in 1906) that I attended his lectures on Money.

however, that the earliest extant manuscript of Marshall's, written about 1871, deals with his treatment of the Quantity Theory. It is a remarkable example of the continuity of his thought from its first beginnings between 1867 and 1877, that the whole of the substance of Book I. chapter iv. of his *Money Credit and Commerce* is to be found here, worked out with fair completeness and with much greater strength of exposition and illustration than he could manage fifty years later. I have no evidence at what date he had arrived at the leading ideas underlying his *Contemporary Review* article or his evidence before the Gold and Silver Commission.¹ But the passages about Commercial Crises in the *Economics of Industry*, from which he quoted freely in his reply to the Trade Depression Commissioners, show that he was on the same lines of thought in 1879. The following are the most important and characteristic of Marshall's original contributions to this part of Economics.

(1) *The exposition of the Quantity Theory of Money as a part of the General Theory of Value.* He always taught that the value of money is a function of its supply on the one hand, and the demand for it, on the other, as measured by "the average stock of command over commodities which each person cares to keep in a ready form." He went on to explain how each individual decides how much to keep in a ready form as the result of a *balance* of advantage between this and alternative forms of wealth. "The exchange value of the whole amount of coin in the Kingdom," he wrote in the manuscript of 1871 mentioned above, "is just equal to that of the whole amount of the commodities over which the members of the community have decided to keep a command in this ready form. Thus with a silver currency if we know the number of ounces of silver in circulation we can determine what the value of one ounce of silver will be in terms of other commodities by dividing the value of above given amount of commodities by the number of ounces. Suppose that on the average each individual in a community chose to keep command over commodities in a ready form to the extent of one-tenth of his year's income. The money, supposed in this case exclusively silver, in the Kingdom will be equal in value to one-tenth of the annual income of the kingdom. Let their habits alter, each

¹ In expounding his "Symmetallism" to the Commissioners he said (Q. 9837): "I have a bimetallic hobby of my own. . . . I have had it by me now for more than 10 years"—which brings this particular train of thought back to before 1878.

person being willing, for the sake of gain in other ways, to be to a greater extent without the power of having each want satisfied as soon as it arises. Let on the average each person choose to keep command over commodities in a ready form only to the extent of a twentieth part of his income. So much silver as before not being wanted at the old value, it will fall in value. It would accordingly be more used in manufactures, while its production from the mines would be checked. . . .”¹ He points out that the great advantage of this method of approach is that it avoids the awkward conception of “rapidity of circulation” (though he is able to show the exact logical relation between the two conceptions): “When, however, we try to establish a connection between ‘the rapidity of circulation’ and the value of money, it introduces grave complications. Mr. Mill is aware of the evil (*Political Economy*, Book III. chap. viii. § 3, latter part), but he has not pointed the remedy.”² Marshall also expounded long ago the way in which distrust of a currency raises prices by diminishing the willingness of the public to hold stocks of it—a phenomenon to which recent events have now called everyone’s attention; and he was aware that the fluctuation in the price level, which is an accompaniment of the trade cycle, corresponds to a fluctuation in the volume of “ready command”³ which the public desire to hold.

(2) *The distinction between the “real” rate of interest and the “money” rate of interest, and the relevance of this to the credit cycle, when the value of money is fluctuating.* The first clear exposition of this is, I think, that given in the *Principles* (1890), Book VI. chap. vi. (concluding note).⁴

(3) *The causal train by which, in modern credit systems, an additional supply of money influences prices, and the part played by the rate of discount.* The *locus classicus* for an account of this, and the only detailed account for many years to which students could be referred, is Marshall’s Evidence before the Gold and Silver Commission, 1887 (particularly the earlier part of his evidence), supplemented by his Evidence before the Indian Currency Committee, 1899. It was an odd state of affairs

¹ When I attended his lectures in 1906 he used to illustrate this theory with some very elegant diagrams.

² This extract, as well as that given above, is from the manuscript of 1871.

³ This is Marshall’s phrase for what I have called “real balances.”

⁴ In repeating the substance of this Note to the Indian Currency Committee (1899) he refers in generous terms to the then-recent elaboration of the idea in Professor Irving Fisher’s *Appreciation and Interest* (1896). See also for some analogous ideas Marshall’s first *Economics of Industry* (1879), Book III. chap. i. §§ 5, 6.

that one of the most fundamental parts of Monetary Theory should, for about a quarter of century, have been available to students nowhere except embedded in the form of question-and-answer before a Government Commission interested in a transitory practical problem.

(4) *The enunciation of the "Purchasing Power Parity" Theory as determining the rate of exchange between countries with mutually inconvertible currencies.* In substance this theory is due to Ricardo, but Professor Cassel's restatement of it in a form applicable to modern conditions was anticipated by Marshall in the memorandum¹ appended to his Evidence before the Gold and Silver Commission (1888). It also had an important place in the conclusions which he laid before the Indian Currency Committee in 1899. The following from an abstract of his opinions handed in by Marshall to the Gold and Silver Commission gives his theory in a nutshell: "Let B have an inconvertible paper-currency (say roubles). In each country prices will be governed by the relation between the volume of the currency and the work it has to do. The gold price of the rouble will be fixed by the course of trade just at the ratio which gold prices in A bear to rouble prices in B (allowing for cost of carriage)."

(5) *The "chain" method of compiling index-numbers.* The first mention of this method is in a footnote to the last section (entitled *How to Estimate a Unit of Purchasing Power*) of his "Remedies for Fluctuations of General Prices" (1887).

(6) *The proposal of paper currency for the circulation (on the lines of Ricardo's "Proposals for an Economical and Secure Currency") based on gold-and-silver symmetallism as the standard.* This suggestion is first found in his reply to the Commissioners on Trade Depression in 1886. He argued that ordinary bi-metallism would always tend to work out as alternative-metallism. "I submit," he went on, "that, if we are to have a great disturbance of our currency for the sake of bi-metallism, we ought to be sure that we get it. . . . My alternative scheme is got from his (Ricardo's) simply by wedding a bar of silver

¹ Entitled *Memorandum as to the Effects which Differences between the Currencies of different Nations have on International Trade*. His illustrations are in terms of English gold and Russian paper roubles; and alternatively of English gold and Indian silver. He argues that a prolonged departure from purchasing power parity (he does not use this term) is not likely except when there is "a general distrust of Russia's economic future, which makes investors desire to withdraw their capital from Russia,"—a remarkable prevision of recent events. A portion of this Memorandum was reproduced as the first part of Appendix G of *Money Credit and Commerce*.

of, say, 2,000 grammes to a bar of gold of, say, 100 grammes; the government undertaking to be always ready to buy or sell a wedded pair of bars for a fixed amount of currency. . . . This plan could be started by any nation without waiting for the concurrence of others." He did not urge the immediate adoption of this system, but put it forward as being at least preferable to bi-metallism. The same proposal was repeated in 1887 in his article on "Remedies for Fluctuations of General Prices," and in 1888 in his Evidence before the Gold and Silver Commission.¹

(7) *The proposal of an official Tabular Standard for optional use in the case of long contracts.* This proposal first appears in an appendix to a paper on remedies for the discontinuity of employment, which Marshall read at the "Industrial Remuneration Conference" in 1885.² He repeated, and added to, what he had said there, in his Reply to the Commissioners on Trade Depression in 1886. "A great cause of the discontinuity of industry," he wrote, "is the want of certain knowledge as to what a pound is going to be worth a short time hence. . . . This serious evil can be much diminished by a plan which economists have long advocated. In proposing this remedy I want government to help business, though not to do business. It should publish tables showing as closely as may be the changes in the purchasing power of gold, and should facilitate contracts for payments to be made in terms of units of fixed purchasing power. . . . The unit of constant general purchasing power would be applicable, at the free choice of both parties concerned, for nearly all contracts for the payment of interest, and for the repayment of loans; and for many contracts for rent, and for wages and salaries. . . . I wish to emphasise the fact that this proposal is independent of the form of our currency, and does not ask for any change in it. I admit that the plan would seldom be available for the purposes of international trade. But its importance as a steadying influence to our home trade could be so great, and its introduction would be so easy and so free from the evils which generally surround the interference of Government in business, that I venture to urge strongly its claims on your immediate attention." This important proposal was further developed in Marshall's remarkable essay on "Remedies for Fluctuations of General Prices," which has been mentioned above. The first three sections of this essay

¹ See also *Money Credit and Commerce*, pp. 64-67.

² Entitled: "How far do remediable causes influence prejudicially (a) the continuity of employment, (b) the rates of wages?"

are entitled : I. *The Evils of a Fluctuating Standard of Value* ; II. *The Precious Metals cannot afford a good Standard of Value* ; III. *A Standard of Value independent of Gold and Silver*. Marshall had a characteristic habit in all his writings of reserving for footnotes what was most novel or important in what he had to say;¹ and the following is an extract from a footnote to this essay : "Every plan for regulating the supply of the currency, so that its value shall be constant, must, I think, be national and not international. I will indicate briefly two such plans, though I do not advocate either of them. On the first plan the currency would be inconvertible. An automatic Government Department would buy Consols for currency whenever £1 was worth more than a unit, and would sell Consols for currency whenever it was worth less. . . . The other plan is that of a convertible currency, each £1 note giving the right to demand at a Government Office as much gold as at that time had the value of half a unit together with as much silver as had the value of half a unit."²

The *Economist* mocked at Symmetallism and the optional Tabular Standard; and Marshall, always a little over-afraid of being thought unpractical or above the head of the "business man" (that legendary monster), did not persevere.³

V

I promised, above, that I would endeavour to set forth the reasons or the excuses for the delay in the publication of Marshall's methods and theories concerning Diagrammatic Methods, the Theory of Foreign Trade, and the Principles of Money and Credit. I think that the reasons, some of which apply to all periods of his life, were partly good and partly bad. Let us take the good ones first.

¹ It would almost be better to read the footnotes and appendices of Marshall's big volumes and omit the text, rather than *vice versa*.

² The last part of this sentence presumes the adoption of Symmetallism. The second plan is akin to Prof. Irving Fisher's "Compensated Dollar."

³ In December 1923, after I had sent him my *Tract on Monetary Reform* he wrote to me : "As years go on it seems to become ever clearer that there ought to be an international currency; and that the—in itself foolish—superstition that gold is the 'natural' representative of value has done excellent service. I have appointed myself amateur currency-mediciner; but I cannot give myself even a tolerably good testimonial in that capacity. And I am soon to go away; but, if I have opportunity, I shall ask new-comers to the celestial regions whether you have succeeded in finding a remedy for currency-maladies." As regards the choice between the advantages of a national and of an international currency I think that what he wrote in 1887 was the truer word, and that a constant-value currency must be, in the first instance at least, a national currency.

Marshall, as already pointed out above, arrived very early at the point of view that the bare bones of economic theory are not worth much in themselves and do not carry one far in the direction of useful, practical conclusions. The whole point lies in applying them to the interpretation of current economic life. This requires a profound knowledge of the actual facts of industry and trade. But these and the relation of individual men to them are constantly and rapidly changing. Some extracts from his Inaugural lecture at Cambridge¹ will indicate his position :

“The change that has been made in the point of view of Economics by the present generation is due to the discovery that man himself is in a great measure a creature of circumstances and changes with them. The chief fault in English economists at the beginning of the century was not that they ignored history and statistics, but that they regarded man as so to speak a constant quantity, and gave themselves little trouble to study his variations. They therefore attributed to the forces of supply and demand a much more mechanical and regular action than they actually have. Their most vital fault was that they did not see how liable to change are the habits and institutions of industry. But the Socialists were men who had felt intensely, and who knew something about the hidden springs of human action of which the economists took no account. Buried among their wild rhapsodies there were shrewd observations and pregnant suggestions from which philosophers and economists had much to learn. Among the bad results of the narrowness of the work of English economists early in the century, perhaps the most unfortunate was the opportunity which it gave to sciolists to quote and misapply economic dogmas. Ricardo and his chief followers did not make clear to others, it was not even quite clear to themselves, that what they were building up was not universal truth, but machinery of universal application in the discovery of a certain class of truths. While attributing high and transcendent universality to the central scheme of economic reasoning, I do not assign any universality to economic dogmas. It is not a body of concrete truth, but an engine for the discovery of concrete truth.”²

¹ *The Present Position of Economics*, 1885.

² This is a portmanteau quotation,—I have run together non-consecutive passages. Parts of this lecture were transcribed almost verbatim in the *Principles*, Book I. chap. iv.

Holding these views and living at a time of reaction against economists when the faults of his predecessors, to which he draws attention above, were doing their maximum amount of harm, he was naturally reluctant to publish the isolated apparatus of economics, divorced from its appropriate applications. Diagrams and pure theory by themselves might do more harm than good, by increasing the confusion between the objects and methods of the mathematical sciences and those of the social sciences, and would give what he regarded as just the wrong emphasis. In publishing his intellectual exercises without facing the grind of discovering their points of contact with the real world, he would be following and giving bad example. On the other hand, the relevant facts were extremely hard to come by—much harder than now. The progress of events in the 'seventies and 'eighties, particularly in America, was extraordinarily rapid; and organised sources of information, of which there are now so many, scarcely existed. In the twenty years from 1875 to 1895 he was, in fact, greatly increasing his command over real facts and his power of economic judgment, and the work which he could have published between 1875 and 1885, would have been much inferior to what he was capable of between 1885 and 1895.

The other valid reason was a personal one. At the critical moment of his life his health was impaired. After health was restored, the preparation of lectures and the time he devoted to his pupils made big interruptions in the writing of books. He was too meticulous in his search for accuracy, and also for conciseness of expression, to be a ready writer. He was particularly unready in the business of fitting pieces into a big whole and of continually re-writing them in the light of their reactions on and from the other pieces. He was always trying to write big books, yet lacked the power of rapid execution and continuous concentration (such as J. S. Mill had) and that of continuous artistic sensibility to the whole (such as Adam Smith had) which are necessary for the complete success of a Treatise.

We are now approaching in our explanations what we must admit as bad reasons. Given his views as to the impossibility of any sort of finality in Economics and as to the rapidity with which events change, given the limitations of his own literary aptitudes and of his leisure for book-making, was it not a fatal decision to abandon his first intention of separate, independent monographs in favour of a great Treatise? I think that it was, and that certain weaknesses contributed to it.

Marshall was conscious of the great superiority of his powers

over those of his surviving contemporaries. In his Inaugural lecture of 1885 he said: "Twelve years ago England possessed perhaps the ablest set of economists that there have ever been in a country at one time. But one after another there have been taken from us Mill, Cairnes, Bagehot, Cliffe Leslie, Jevons, Newmarch and Fawcett." There was no one left who could claim at that date to approach Marshall in stature. To his own pupils, who were to carry on the Economics of the future, Marshall was ready to devote time and strength. But he was too little willing to cast his half-baked bread on the waters, to trust in the efficacy of the co-operation of many minds, and to let the big world draw from him what sustenance it could. Was he not attempting, contrary to his own principles, to achieve an impossible finality? An Economic Treatise may have great educational value. Perhaps we require one treatise, as a *pièce de résistance*, for each generation. But in view of the transitory character of economic facts, and the bareness of economic principles in isolation, does not the progress and the daily usefulness of economic science require that pioneers and innovators should eschew the Treatise and prefer the pamphlet or the monograph? I depreciated Jevons' *Political Economy* above on the ground that it was no more than a brilliant brochure. Yet it was Jevons' willingness to spill his ideas, to flick them at the world, that won him his great personal position and his unrivalled power of stimulating other minds. Every one of Jevons' contributions to Economics was in the nature of a pamphlet. Malthus spoilt the *Essay on Population* when, after the first edition, he converted it into a Treatise. Ricardo's greatest works were written as ephemeral pamphlets. Did not Mill, in achieving by his peculiar gifts a successful Treatise, do more for pedagogics than for science, and end by sitting like an Old Man of the Sea on the voyaging Sinbads of the next generation?¹ Economists must leave to Adam Smith alone the glory of the Quarto, must pluck the day, fling pamphlets into the wind, write always *sub specie temporis*, and achieve immortality by accident, if at all.

Moreover, did not Marshall, by keeping his wisdom at home until he could produce it fully clothed, mistake, perhaps, the true nature of his own special gift? "Economics," he said in the passage quoted above, "is not a body of concrete truth, but an engine for the discovery of concrete truth." This engine, as

¹ How Jevons hated Mill, just because he had been compelled to lecture on Mill's *Political Economy* as a Gospel Text-book!

we employ it to-day, is largely Marshall's creation. He put it in the hands of his pupils long before he offered it to the world. The building of this engine was the essential achievement of Marshall's peculiar genius. Yet he hankered greatly after the "concrete truth" which he had disclaimed and for the discovery of which he was not specially qualified. I have very early memories, almost before I knew what Economics meant, of the sad complaints of my father, who had been able to observe as pupil and as colleague the progress of Marshall's thought almost from the beginning, of Marshall's obstinate refusal to understand where his special strength and weakness really lay, and of how his unrealisable ambitions stood in the way of his giving to the world the true treasures of his mind and genius. Economics all over the world might have progressed much faster and Marshall's authority and influence would have been far greater, if his temperament had been a little different.

Two other characteristics must be mentioned. First, Marshall was too much afraid of being wrong, too thin-skinned towards criticism, too easily upset by controversy even on matters of minor importance. An extreme sensitiveness deprived him of magnanimity towards the critic or the adversary. This fear of being open to correction by speaking too soon aggravated other tendencies. Yet after all there is no harm in being sometimes wrong—especially if one is promptly found out. Nevertheless this quality was but the defect of the high standard he never relaxed—which touched his pupils with awe—of scientific accuracy and truth.

Second, Marshall was too anxious to do good. He had an inclination to undervalue those intellectual parts of the subject which were not *directly* connected with human well-being or the condition of the working classes or the like, although *indirectly* they might be of the utmost importance, and to feel that when he was pursuing them he was not occupying himself with the Highest. It came out of the conflict, already remarked, between an intellect, which was hard, dry, critical, as unsentimental as you could find, with emotions and, generally unspoken, aspirations of quite a different type. When his intellect chased diagrams and Foreign Trade and Money, there was an evangelical moraliser of an imp somewhere inside him, that was so ill-advised as to disapprove. Near the end of his life, when the intellect grew dimmer and the preaching imp could rise nearer to the surface to protest against its lifelong servitude, he once said: "If I had to live my life over again

I should have devoted it to psychology. Economics has too little to do with ideals. If I said much about them I should not be read by business men." But these notions had always been with him. He used to tell the following story of his early life : "About the time that I first resolved to make as thorough a study as I could of Political Economy (the word Economics was not then invented) I saw in a shop-window a small oil painting [of a man's face with a strikingly gaunt and wistful expression, as of one 'down and out'] and bought it for a few shillings. I set it up above the chimney-piece in my room in college and thenceforward called it my patron saint, and devoted myself to trying how to fit men like that for heaven. Meanwhile I got a good deal interested in the semi-mathematical side of pure Economics, and was afraid of becoming a mere thinker. But a glance at my patron saint seemed to call me back to the right path. That was particularly useful after I had been diverted from the study of ultimate aims to the questions about Bimetallism, etc., which at one time were dominant. I despised them, but the 'instinct of the chase' tempted me towards them." This was the defect of that other great quality of his, which always touched his pupils—his immense disinterestedness and public spirit.

VI

At any rate, in 1877 Marshall turned aside to help his wife with the *Economics of Industry* (published in 1879), designed as a manual for Cambridge University Extension lecturers, which, as it progressed, became more and more his work. In later years Marshall grew very unfriendly to the little book. After the publication of the *Principles* he suppressed it and replaced it in 1892 with an almost wholly different book under the same title, which was mainly an abridgment of the *Principles* and "an attempt to adapt it to the needs of junior students." Marshall's feelings were due, I think, to the fact that his theory of value, which was here first published to the world, was necessarily treated in a brief and imperfect manner, yet remained for eleven years all that the outside world had to judge from. His controversies in the *Quarterly Journal of Economics* in 1887 and 1888¹ with American economists who had read the little book accentuated this feeling. He also revolted later on from the conception of Economics as a subject capable of being treated in a light and simple manner for elementary students by half-instructed

¹ See the Bibliographical Note.

Extension lecturers¹ aided by half-serious books. "This volume," he wrote in 1910 to a Japanese translator of the 1879 book, "was begun in the hope that it might be possible to combine simplicity with scientific accuracy. But though a simple book can be written on selected topics, the central doctrines of Economics are not simple and cannot be made so."

Yet these sentiments do a real injustice to the book. It won high praise from competent judges and was, during the whole of its life, much the best little text-book available.² If we are to have an elementary text-book at all, this one was probably, in relation to its contemporaries and predecessors, the best thing of the kind ever done—much better than the primers of Mrs. Fawcett or Jevons or any of its many successors. Moreover, the latter part of Book III. on Trade Combinations, Trade Unions, Trade Disputes and Co-operation was the first satisfactory treatment on modern lines of these important topics.

After this volume³ was out of the way, Marshall's health was at its worst. When in 1881 he went abroad to recuperate, his mind did not return to Money or to Foreign Trade, but was concentrated on the central theories which eventually appeared in the *Principles*.⁴ Subject to the successive interruptions of his Oxford appointment, his removal to Cambridge, the preparation of his lectures there, his incursion into the Bimetallic controversy and his Evidence before the Gold and Silver Commission, the next nine years were spent on the preparation of this book.

Marshall intended at first to cover the whole field of Economics in a single volume. His theory of Distribution was taking shape in 1883 and 1884.⁵ In the summer of 1885 (in the Lakes), the first of his Cambridge Long Vacations, the volume began to assume its final form. "The work done during this year," he

¹ So far, however, from being out of sympathy with the ideals underlying the Extension Movement (or its modern variant the W.E.A.), Marshall had been connected with it from the beginning, and had himself given Extension Courses at Bristol for five years.

² So much did the public like it, that 15,000 copies had been sold before it was suppressed.

³ Its preface mentioned a forthcoming companion volume on the "Economics of Trade and Finance," which was never written.

⁴ Mrs. Marshall writes: "Book III. on Demand was largely thought out and written on the roof at Palermo, Nov. 1881-Feb. 1882."

⁵ It appears in outline in an article written in about two days in the summer of 1884, when he was staying at Rocquami Bay, Guernsey. This was published in the *Co-operative Annual* for 1885 under the title "Theories and Facts about Wages," and was reprinted in the same year as an appendix to his paper read before the Industrial Remuneration Conference.

wrote,¹ “ was not very satisfactory, partly because I was gradually outgrowing the older and narrower conception of my book, in which the abstract reasoning which forms the backbone of the science was to be made prominent, and had not yet mustered courage to commit myself straight off to a two-volume book which should be the chief product (as gradually improved) of my life’s work.”² In 1886, “ my chief work was recasting the plan of my book. This came to a head during my stay at Sheringham near Cromer in the summer. I then put the contents of my book into something like their final form, at least so far as the first volume is concerned. And thenceforward for the first time I began to try to put individual chapters into a form in which I expected them to be printed.” In 1887 (at Guernsey), “ I did a great deal of writing at my book; and having arranged with Macmillan for its publication, I began just at the end of this academic year to send proofs to the printers: all of it except about half of Book VI. being typewritten in a form not ready for publication, but ready to be put into a form for publication—I mean the matter was nearly all there and the arrangement practically settled.” In 1888, “ by the end of the Long Vacation I had got Book V. at the printer’s, Book IV. being almost out of my hands. Later on I decided to bring before the Book on Normal Value or Distribution and Exchange a new Book on Cost of Production further considered,³ putting into it (somewhat amplified) discussions which I had intended to keep for the later part of the Book on Normal Value. That Book now became Book VII. This decision was slowly reached, and not much further progress was made during this Calendar year.” “ During the first four months of 1889 I worked at Book VI., finishing the first draft of the first four chapters of it, and working off Book V. Meanwhile I had paid a good deal of attention to the Mathematical Appendix and got a good part of that into print. The Long Vacation, of which eight weeks were spent at Bordeaux Harbour, was occupied chiefly with Book VI. chaps. v. and vi., and Book VII. chaps. i.–v.” The work was now pushed rapidly to a conclusion and was published in July 1890.

By 1890 Marshall’s fame stood high,⁴ and the *Principles of*

¹ The following extracts are from some notes he put together summarising his work from 1885 to 1889.

² Also, “ Work during the summer a good deal interrupted by making plans for my new house in Madingley Road.”

³ After the first edition, this Book was incorporated in Book V. So that *Value* again became Book VI.

⁴ “ Rarely in modern times,” said the *Scotsman*, “ has a man achieved such a high reputation as an authority on such a slender basis of published work.”

Economics,¹ Vol. I.,² was delivered into an expectant world. Its success was immediate and complete. The book was the subject of leading articles and full-dress reviews throughout the Press. The journalists could not distinguish the precise contributions and innovations which it contributed to science; but they discerned with remarkable quickness that it ushered in a new age of economic thought. "It is a great thing," said the *Pall Mall Gazette*, "to have a Professor at one of our old Universities devoting the work of his life to recasting the science of Political Economy as the Science of Social Perfectibility." The New Political Economy had arrived, and the Old Political Economy, the dismal science, "which treated the individual man as a purely selfish and acquisitive animal, and the State as a mere conglomeration of such animals," had passed away.³ "It will serve," said the *Daily Chronicle*, "to restore the shaken credit of political economy, and will probably become for the present generation what Mill's *Principles* was for the last." "It has made almost all other accounts of the science antiquated or obsolete," said the *Manchester Guardian*. "It is not premature to predict that Professor Marshall's treatise will form a landmark in the development of political economy, and that its influence on the direction and temper of economic inquiries will be wholly good." These are samples from a general chorus.

It is difficult for those of us who have been brought up entirely under the influences of Marshall and his book to appreciate the position of the science in the long interregnum between Mill's *Principles of Political Economy* and Marshall's *Principles of Economics*, or to define just what difference was made by the publication of the latter. The following is an attempt, with help from notes supplied by Professor Edgeworth, to indicate some of its more striking contributions to knowledge.⁴

(1) The unnecessary controversy, caused by the obscurity of

¹ This was the first book in England to be published at a *net* price, which gives it an important place in the history of the publishing trade. (See Sir F. Macmillan's *The Net Book Agreement*, 1899, pp. 14-16.) The dates of the successive editions are given in the Bibliographical Note. 37,000 copies have been sold up to the present time.

² The suffix Vol. I. was not dropped until the sixth edition in 1910.

³ Not that Old P.E. was really thus, but this was the journalists' way of expressing the effect which Marshall's outlook made on them.

⁴ Including hints and anticipations in earlier writings; as Professor Edgeworth wrote, reviewing the first edition of the *Principles* (*The Academy*, Aug. 30, 1890): "Some of Professor Marshall's leading ideas have been more or less fully expressed in his earlier book (the little *Economics of Industry*), and in certain papers which, though unpublished, have not been unknown. The light of dawn was diffused before the orb of day appeared above the horizon."

Ricardo and the rebound of Jevons, about the respective parts played by Demand and by Cost of Production in the determination of Value was finally cleared up. After Marshall's analysis there was nothing more to be said. "The new light thrown on Cost of Production," Prof. Edgeworth writes, "enabled one more clearly to discern the great part which it plays in the determination of value; that the classical authors had been rightly guided by their intuitions, as Marshall has somewhere said, when they emphasised the forces of Supply above those of Demand. The rehabilitation of the older writers—much depreciated by Jevons, Böhm-Bawerk and others in the 'seventies and 'eighties of last century—produced on the reviewer of the first edition an impression which is thus expressed: 'The mists of ephemeral criticism are dispelled. The eternal mountains reappear in their natural sublimity, contemplated from a kindred height.'"

(2) The general idea, underlying the proposition that Value is determined at the equilibrium point of Demand and Supply, was extended so as to discover a whole Copernican system, by which all the elements of the economic universe are kept in their places by mutual counterpoise and interaction.¹ The general theory of economic equilibrium was strengthened and made effective as an organon of thought by two powerful subsidiary conceptions—the *Margin* and *Substitution*. The notion of the Margin was extended beyond Utility to describe the equilibrium point in given conditions of any economic factor which can be regarded as capable of small variations about a given value, or in its functional relation to a given value. The notion of Substitution was introduced to describe the process by which Equilibrium is restored or brought about. In particular the idea of *Substitution at the Margin*, not only between alternative objects of consumption, but also between the factors of production, was extraordinarily fruitful in results. Further, there is "the double relation in which the various agents of production stand to one another. On the one hand they are often rivals for employment; any one that is more efficient than another in proportion to its cost tending to be substituted for it, and thus limiting the demand price for the other. And on the other hand, they all constitute the field of employment for each other; there is no field of employment for any one, except in so

¹ Already in 1872, in his review of Jevons, Marshall was in possession of the idea of the mutually dependent positions of the economic factors. "Just as the motion of every body in the solar system," he there wrote, "affects and is affected by the motion of every other, so it is with the elements of the problem of political economy."

far as it is provided by the others : the national dividend which is the joint product of all, and which increases with the supply of each of them, is also the sole source of demand for each of them."¹

This method allowed the subsumption of wages and profits under the general laws of value, supply and demand,—just as previously the theory of money had been so subsumed. At the same time the peculiarities in the action of demand and supply which determine the wages of the labourer or the profits of the employer were fully analysed.

(3) The explicit introduction of the element of Time as a factor in economic analysis is mainly due to Marshall. The conceptions of the "long" and "short" period are his, and one of his objects was to trace "a continuous thread running through and connecting the applications of the general theory of equilibrium of demand and supply to different periods of time."² Connected with these there are further distinctions, which we now reckon essential to clear thinking, which are first explicit in Marshall—particularly those between "external" and "internal" economies³ and between "prime" and "supplementary" cost. Of these pairs the first was, I think, a complete novelty when the *Principles* appeared; the latter, however, already existed in the vocabulary of manufacture, if not in that of economic analysis.

By means of the distinction between the long and the short period, the meaning of "normal" value was made precise; and with the aid of two further characteristically Marshallian conceptions—Quasi-Rent and the Representative Firm—the doctrine of Normal Profit was evolved.

All these are path-breaking ideas which no one who wants to think clearly can do without. Nevertheless this is the quarter in which, in my opinion, the Marshall analysis is least complete and satisfactory, and where there remains most to do. As he says himself in the Preface to the first edition of the *Principles*, the element of time "is the centre of the chief difficulty of almost every economic problem."

(4) The special conception of Consumers' Rent or Surplus, which was a natural development of Jevonian ideas, has perhaps proved less fruitful of practical results than seemed likely at

¹ *Principles*, Book VI. chap. xi. § 5.

² *Ibid.*, Book VI. chap. xi. § 1.

³ The vital importance of this distinction to a correct theory of Equilibrium under conditions of increasing return is, of course, now obvious. But it was not so before the *Principles*.

first.¹ But one could not do without it as part of the apparatus of thought, and it is particularly important in the *Principles* because of the use of it (in Prof. Edgeworth's words) "to show that *laissez-faire*, the maximum of advantage attained by unrestricted competition, is not necessarily the greatest possible advantage attainable." Marshall's proof that *laissez-faire* breaks down in certain conditions *theoretically*, and not merely practically, regarded as a principle of maximum social advantage, was of great philosophical importance. But Marshall does not carry this particular argument very far,² and the further exploration of that field has been left to Marshall's favourite pupil and successor, Professor Pigou, who has shown in it what a powerful engine for cutting a way in tangled and difficult country the Marshall analysis affords in the hands of one who has been brought up to understand it well.

(5) Marshall's analysis of Monopoly should also be mentioned in this place; and perhaps his analysis of increasing return, especially where external economies exist, belongs better here than where I have mentioned it above.

Marshall's theoretical conclusions in this field and his strong sympathy with socialistic ideas were compatible, however, with an old-fashioned belief in the strength of the forces of competition. Professor Edgeworth writes: "I may record the strong impression produced on me the first time I met Marshall—far back in the 'eighties, I think—by his strong expression of the conviction that Competition would for many a long day rule the roast as a main determinant of value. Those were not his words, but they were of a piece with the dictum in his article on *The Old Generation of Economists and the New*:³ 'When one person is willing to sell a thing at a price which another is willing to pay for it, the two manage to come together in spite of prohibitions of

¹ Nevertheless, Professor Edgeworth points out, even "before the publication of the *Principles* Marshall quite understood—what the critics of the doctrine in question have not generally understood, and even some of the defenders have not adequately emphasised—that the said measurement applies accurately only to transactions which are on such a scale as not to disturb the marginal value of money."

² *Industry and Trade*, however, is partly devoted to illustrating it. "The present volume," he says in the Preface to that book, "is in the main occupied with the influences which still make for sectional and class selfishness: with the limited tendencies of self-interest to direct each individual's action on those lines, in which it will be most beneficial to others; and with the still surviving tendencies of associated action by capitalists and other business men, as well as by employees, to regulate output, and action generally, by a desire for sectional rather than national advantage."

³ *Quarterly Journal of Economics*, 1896, Vol. XI., p. 129.

King or Parliament or of the officials of a Trust or Trade-Union.' ”

(6) In the provision of terminology and apparatus to aid thought I do not think that Marshall did economists any greater service than by the explicit introduction of the idea of “elasticity.” Book III. chap. iii. of the first edition of the *Principles*, which introduces the definition of “Elasticity of Demand,”¹ is virtually the earliest treatment² of a conception without the aid of which the advanced theory of Value and Distribution can scarcely make progress. The notion that demand may respond to a change of price to an extent that may be either more or less than in proportion had been, of course, familiar since the discussions at the beginning of the nineteenth century about the relation between the supply and the price of wheat.³ Indeed it is rather remarkable that the notion was not more clearly disentangled either by Mill or by Jevons.⁴ But it was so. And the concept $e = \frac{dx}{x} \div - \frac{dy}{y}$ is wholly Marshall's.

The way in which Marshall introduces Elasticity, without any suggestion that the idea is novel, is remarkable and characteristic. The field of investigation opened up by this instrument of thought is again one where the full fruits have been reaped by Professor Pigou rather than by Marshall himself.

(7) The historical introduction to the *Principles* deserves some comment. In the first edition Book I. includes two chapters entitled “The Growth of Free Industry and Enterprise.” In the latest editions most of what has been retained out of these chapters

¹ Supplemented by the mathematical note in the Appendix.

² Strictly, the earliest reference to “elasticity” is to be found in Marshall's contribution “On the Graphic Method of Statistics” to the Jubilee Volume of the *Royal Statistical Society* (1885), p. 260. But it is introduced there only in a brief concluding note, and mainly with the object of showing that a simple diagrammatic measure of elasticity is furnished by the ratio between the two sections into which that part of the tangent to the demand curve which lies between the axes is divided by the point of contact. Mrs. Marshall tells me that he hit on the notion of elasticity, as he sat on the roof at Palermo shaded by the bath-cover in 1881, and was highly delighted with it.

³ Mill quotes Tooke's *History of Prices* in this connection.

⁴ Professor Edgeworth in his article on “Elasticity” in Palgrave's *Dictionary* refers particularly to Mill's *Political Economy*, Book III. chap. ii. § 4, and chap. viii. § 2, as representative of the pre-Marshall treatment of the matter. The first of these passages points out the varying proportions in which demand may respond to variations of price; the second treats (in effect) of the unitary elasticity of the demand for money. Professor Edgeworth now adds a reference to Book III. chap. xviii. § 5, where Mill deals in substance with the effect of elasticity on the Equation of International Demand. Elsewhere in this chapter Mill speaks of a demand being “more extensible by cheapness” (§ 4) and of the “extensibility of their [foreign countries'] demand for its [the home country's] commodities” (§ 8).

has been relegated to an Appendix. Marshall was always in two minds about this. On the one hand his views as to the perpetually changing character of the subject-matter of Economics led him to attach great importance to the historical background as a corrective to the idea that the axioms of to-day are permanent. He was also dissatisfied with the learned but half-muddled work of the German historical school. On the other hand he was afraid of spending too much time on these matters (at one period he had embarked on historical inquiries on a scale which, he said, would have occupied six volumes), and of overloading with them the essential matter of his book. At the time when he was occupied with economic history, there was very little ready-made material to go upon, and he probably wasted much strength straying unnecessarily along historical by-ways and vacillating as to the importance to be given in his own book to the historical background. The resulting compromise, as realised in the *Principles*, was not very satisfactory. Everything is boiled down into wide generalisations, the evidence for which he has not space to display.¹ Marshall's best historical work is to be found, perhaps, in *Industry and Trade*, published in 1919, many years after most of the work had been done. The historical passages of the *Principles* were brusquely assailed by Dr. William Cunningham in an address before the Royal Historical Society, printed in the ECONOMIC JOURNAL, Vol. II. (1892); and Marshall, breaking his general rule of not replying to criticism, came successfully out of the controversy in a reply printed in the same issue of the JOURNAL.²

The way in which Marshall's *Principles of Economics* is written, is more unusual than the casual reader will notice. It is elaborately unsensational and under-emphatic. Its rhetoric is of the simplest, most unadorned order. It flows in a steady, lucid stream, with

¹ Marshall himself wrote (in his reply to Dr. Cunningham, ECONOMIC JOURNAL, Vol. II. p. 507): "I once proposed to write a treatise on economic history, and for many years I collected materials for it. Afterwards I selected such part of these as helped to explain why many of the present conditions and problems of industry are only of recent date, and worked it into the chapters in question. But they took up much more space than could be spared for them. So I recast and compressed them; and in the process they lost, no doubt, some sharpness of outline and particularity of statement."

² Dr. Clapham writes: "In reading the Appendices to *Industry and Trade* I was very much impressed with Marshall's knowledge of economic history since the seventeenth century, as it was known thirty years ago, *i.e.* at the time of the controversy. I feel sure that at that time he understood the seventeenth to nineteenth centuries better than Cunningham, and he had—naturally—a feeling for their quantitative treatment to which Cunningham never attained."

few passages which stop or perplex the intelligent reader, even though he know but little economics. Claims to novelty or to originality on the part of the author himself are altogether absent.¹ Passages imputing error to others are rare; and it is explained that earlier writers of repute must be held to have *meant* what is right and reasonable, whatever they may have said.² The connexity and continuity of the economic elements, as signified in Marshall's two mottoes, "Natura non facit saltum" and "The many in the one, the one in the many," are the chief grounds of difficulty. But, subject to this, the chief impression which the book makes on the minds of uninitiated readers—particularly on those who do not get beyond Book IV.—is apt to be, that they are perusing a clear, apt and humane exposition of fairly obvious matters.

By this stylistic achievement Marshall attained some of his objects. The book reached the general public. It increased the public esteem of Economics. The minimum of controversy was provoked. The average reviewer liked the author's attitude to his subject-matter, to his predecessors, and to his readers, and delighted Marshall by calling attention to the proper stress laid by him on the ethical element and to the much required humanising which the dismal science received at his hands;³ and, at the same time, could remain happily insensible to the book's intellectual stature. As time has gone on, moreover, the in-

¹ As one intelligent reviewer remarked (*The Guardian*, Oct. 15, 1890): "This book has two aspects. On the one hand, it is an honest and obstinate endeavour to find out the truth; on the other hand, it is an ingenious attempt to disclaim any credit for discovering it, on the ground that it was all implicitly contained in the works of earlier writers, especially Ricardo." But most of them were taken in. The following is typical (*Daily Chronicle*, July 24, 1890): "Mr. Marshall makes no affectation of new discoveries or new departures; he professes merely to give a modern version of the old doctrines adjusted to the results of more recent investigation."

² Marshall carried this rather too far. But it was an essential truth to which he held firmly, that those individuals who are endowed with a special genius for the subject and have a powerful economic intuition will often be more right in their conclusions and implicit presumptions than in their explanations and explicit statements. That is to say, their intuitions will be in advance of their analysis and their terminology. Great respect, therefore, is due to their general scheme of thought, and it is a poor thing to pester their memories with criticism which is really verbal. Marshall's own economic intuition was extraordinary, and lenience towards the apparent errors of great predecessors is treatment to which in future times he will himself have an exceptional claim.

³ Fashions change! When, nearly thirty years later, *Industry and Trade* appeared, one reviewer wrote (*Athenæum*, Oct. 31, 1919): "Perhaps its least satisfactory feature is its moral tone. Not because that tone is low—quite the contrary; but because, in a scientific treatise, a moral tone, however elevated, seems altogether out of place."

tellektual qualities of the book have permeated English economic thought, without noise or disturbance, in a degree which can easily be overlooked.

The method has, on the other hand, serious disadvantages. The lack of emphasis and of strong light and shade, the sedulous rubbing away of rough edges and salients and projections, until what is most novel can appear as trite, allows the reader to pass too easily through. Like a duck leaving water, he can escape from this douche of ideas with scarce a wetting. The difficulties are concealed; the most ticklish problems are solved in foot-notes; a pregnant and original judgment is dressed up as a platitude. The author furnishes his ideas with no labels of salesmanship and few hooks for them to hang by in the wardrobe of the mind. A student can read the *Principles*, be fascinated by its pervading charm, think that he comprehends it, and, yet, a week later, know but little about it. How often has it not happened even to those who have been brought up on the *Principles*, lighting upon what seems a new problem or a new solution, to go back to it and to find, after all, that the problem and a better solution have been always there, yet quite escaping notice! It needs much study and independent thought on the reader's own part, before he can know the half of what is contained in the concealed crevices of that rounded globe of knowledge, which is Marshall's *Principles of Economics*.

VII

The Marshalls returned in 1885 to the Cambridge of the early years after the reforms, which finally removed restrictions upon the marriage of Fellows. They built for themselves a small house, called Balliol Croft, on St. John's College land in the Madingley Road, close to the Backs, yet just on the outskirts of the town, so that on one side open country stretched towards Madingley Hill. Here Alfred Marshall lived for nearly forty years. The house, built in a sufficient garden, on an unconventional plan so as to get as much light as possible, just accommodated the two of them and a faithful maid. His study, lined with books, and filled transversally with shelves, had space by the fire for two chairs. Here were held his innumerable *tête-à-têtes* with pupils, who would be furnished as the afternoon wore on with a cup of tea and a slice of cake on an adjacent stool or shelf. Larger gatherings took place downstairs, where

the dining-room and Mrs. Marshall's sitting-room could be thrown into one on the occasion of entertainments. The unvarying character of the surroundings—upstairs the books and nests of drawers containing manuscript, downstairs the Michaelangelo figures from the Sistine Chapel let into the furniture, and at the door the face of Sarah the maid,¹ had a charm and fascination for those who paid visits to their Master year after year, like the Cell or Oratory of a Sage.

In that first age of married society in Cambridge, when the narrow circle of the spouses-regnant of the Heads of Colleges and of a few wives of Professors was first extended, several of the most notable Dons, particularly in the School of Moral Science, married students of Newnham. The double link between husbands and between wives bound together a small cultured society of great simplicity and distinction. This circle was at its full strength in my boyhood, and, when I was first old enough to be asked out to luncheon or to dinner, it was to these houses that I went. I remember a homely, intellectual atmosphere which it is harder to find in the swollen, heterogeneous Cambridge of to-day. The entertainments at the Marshalls' were generally occasioned, in later days, by the visit of some fellow-economist, often an eminent foreigner, and the small luncheon party would usually include a couple of undergraduates and a student or young lecturer from Newnham. I particularly remember meeting in this way Adolf Wagner and N. G. Pierson, representatives of a generation of economists which is now almost passed. Marshall did not much care about going to other people's houses, and was at his best fitting his guests comfortably into a narrow space, calling out staff directions to his wife, in unembarrassed, half-embarrassed mood, with laughing, high-pitched voice and habitual jokes and phrases. He had great conversational powers on all manner of matters; his cheerfulness and gaiety were unbroken; and, in the presence of his bright eyes and smiling talk and unaffected absurdity, no one could feel dull.

In earlier days, particularly between 1885 and 1900, he was fond of asking working-men leaders to spend a week-end with him,—for example, Thomas Burt, Ben Tillett, Tom Mann and many others. Sometimes these visits would be fitted in

¹ She lived with them for more than forty years on terms almost of intimacy. Marshall would often extol her judgment and wisdom. He himself designed the small kitchen, like a ship's cabin, in which she dwelt at Balliol Croft. Marshall was always much loved by his servants and College gyps. He treated them like human beings and talked to them about the things which he was interested in himself.

with meetings of the Social Discussion Society, which the visitor would address. In this way he came to know most of the leading co-operators and Trade Unionists of the past generation. In truth he sympathised with the Labour Movement and with Socialism (just as J. S. Mill had) in every way, except intellectually.¹

Marshall was now settled in an environment and in habits which were not to be changed, and we must record in rapid survey the outward events of his life from 1885 to the resignation of his professorship in 1908.

From 1885 to 1890 he was mainly occupied, as we have seen, with the *Principles*. But the bibliographical note, below, records other activities, particularly his paper before the Industrial Remuneration Conference in 1885, his evidence before the Gold and Silver Commission in 1887-8, and his Presidential Address before the Co-operative Congress in 1889. In the summer of 1890 he delivered his interesting Presidential Address on "Some Aspects of Competition" to the Economic Section of the British Association at Leeds. He was also much occupied with his lectures, and these five years were the most active and productive of his life.

He gave two lectures a week in a general course, and one lecture a week on special theoretical difficulties; but he lectured, as a rule, in only two terms out of three, making about forty-five lectures in the year. Two afternoons a week, from four to seven, Professor Marshall, it was announced, "will be at home to give advice and assistance to any members of the University who may call on him, whether they are attending his lectures or not." In the late 'eighties the attendance at his general courses would vary between forty

¹ In the Preface to *Industry and Trade* he wrote :—"For more than a decade, I remained under the conviction that the suggestions, which are associated with the word 'socialism,' were the most important subject of study, if not in the world, yet at all events for me. But the writings of socialists generally repelled me, almost as much as they attracted me; because they seemed far out of touch with realities: and, partly for that reason, I decided to say little on the matter, till I had thought much longer. Now, when old age indicates that my time for thought and speech is nearly ended, I see on all sides marvellous developments of working-class faculty: and, partly in consequence, a broader and firmer foundation for socialistic schemes than when Mill wrote. But no socialistic scheme, yet advanced, seems to make adequate provision for the maintenance of high enterprise and individual strength of character; nor to promise a sufficiently rapid increase in the business plant and other material implements of production. . . . It has seemed to me that those have made most real progress towards the distant goal of ideally perfect social organisation, who have concentrated their energies on some particular difficulties in the way, and not spent strength on endeavouring to rush past them."

and seventy, and at his special courses half that number. But his methods choked off—more or less deliberately—the less serious students, and as the academic year progressed the attendance would fall to the lower figure.

It was not Marshall's practice to write out his lectures. "He rarely used notes," Mrs. Marshall writes, "except for lectures on Economic History. He sometimes made a few notes before he went to lecture, and thought over them on his way to the class. He said that the reason why he had so many pupils who thought for themselves was that he never cared to present the subject in an orderly and systematic form or to give information. What he cared to do in lectures was to make the students *think with him*. He gave questions once a week on a part of the subject which he had not lectured over, and then answered the questions in class. He took immense pains in looking over the answers, and used red ink on them freely."¹ I think that the informality of his lectures may have increased as time went on. Certainly in 1906, when I attended them, it was impossible to bring away coherent notes. But the above was always his general method. His lectures were not, like Sidgwick's, books in the making. This practice may have contributed, incidentally, to the retardation of his published work. But the sharp distinction which he favoured between instruction by book and oral instruction by lecture was, as he developed it, extraordinarily stimulating for the better men and where the class was not too large. It is a difficult method to employ where the class exceeds forty at the most (my memory of the size of his class when I attended it is of nearer twenty than forty), and it is not suited to students who have no real aptitude or inclination for economics (in whose interest the curricula of the vast Economic Schools of to-day are mainly designed). The following titles of successive courses, soon after he arrived in Cambridge, indicate the ground which he purported to cover :

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|---------|----------------|---|
| 1885-6. | October Term : | Foreign Trade and Money. |
| | Easter | „ : Speculation, Taxation, etc. (Mill, IV and V). |
| 1886-7. | October | „ : Production and Value. |
| | Lent | „ : Distribution. |

After the publication of the *Principles* in 1890, his first task was to prepare the abridgment, entitled *Economics of Industry*,²

¹ I have papers which I wrote for him on which his red-ink comments and criticisms occupy almost as much space as my answers.

² This book was frequently reprinted, and revised editions were prepared in 1896 and 1899; 81,000 copies of it have been sold up to date.

which appeared early in 1892.¹ He also spent much time on the successive revisions of the *Principles*, the most important changes being introduced in the third edition, published in 1895, and the fifth edition in 1907. It is doubtful whether the degree of improvement effected corresponded to the labour involved. These revisions were a great obstacle to his getting on with what was originally intended to be Volume II. of the *Principles*.

The main interruption, however, came from his membership of the Royal Commission on Labour, 1891–1894. He welcomed greatly this opportunity of getting into close touch with the raw material of his subject, and he played a big part in the drafting of the Final Report. The parts dealing with Trade Unions, Minimum Wage, and Irregularity of Employment were especially his work.

Meanwhile he was at work on the continuation of the *Principles*. "But he wasted a great deal of time," Mrs. Marshall writes, "because he changed his method of treatment so often. In 1894 he began a historical treatment, which he called later on a White Elephant, because it was on such a large scale that it would have taken many volumes to complete. Later on he used fragments of the White Elephant in the descriptive parts of *Industry and Trade*."

Marshall's work on the Labour Commission was only one of a series of services to Governmental inquiries. In 1893 he gave evidence before the Royal Commission on the Aged Poor, in which he proposed to associate Charity Organisation Committees with the administration of the Poor Law. Early in 1899 he gave carefully prepared evidence before the Indian Currency Committee. His evidence on monetary theory was in part a repetition of what he had said to the Gold and Silver Commission eleven years earlier, but he himself considered that the new version was an improvement and constituted his best account of the theory of money. The parts dealing with specifically Indian problems were supported by many statistical diagrams. His interest in the economic and currency problems of India had been first aroused during the time at Oxford when it was his duty to lecture to Indian Civil Service Probationers. He was pleased with his detailed realistic inquiries into Indian problems,² and the great rolls of Indian charts, not all of which were published, were always at hand as part of the furniture of his study.

¹ The concluding chapter on "Trade Unions" goes outside the field of the *Principles* and incorporates some material from the earlier *Economics of Industry*.

² He had many devoted Indian (and also Japanese) pupils.

Later in the same year, 1899, he prepared Memoranda on the Classification and Incidence of Imperial and Local Taxes for the Royal Commission on Local Taxation. In 1903, at the height of the Tariff Reform controversy, he wrote, at the request of the Treasury, his admirable Memorandum on "The Fiscal Policy of International Trade." This was printed in 1908 as a Parliamentary paper, at the instance of Mr. Lloyd George, then Chancellor of the Exchequer, "substantially as it was written originally." The delay of a critical five years in the date of publication was characteristically explained by Marshall as follows: "Some large corrections of, and additions to, this Memorandum were lost in the post abroad¹ in August 1903; and when I re-read the uncorrected proofs of it in the autumn, I was so dissatisfied with it that I did not avail myself of the permission kindly given to me to publish it independently. The haste with which it was written and its brevity are partly responsible for its lack of arrangement, and for its frequent expression almost dogmatically of private opinion, where careful argument would be more in place. It offends against my rule to avoid controversial matters; and, instead of endeavouring to probe to the causes of causes, as a student's work should, it is concerned mainly with proximate causes and their effects. I elected, therefore, to remain silent on the fiscal issue until I could incorporate what I had to say about it in a more careful and fuller discussion; and I am now engaged on that task. But it proceeds slowly; and time flies."

Marshall's growing inhibitions are exposed in these sentences. The difficulties of bringing him to the point of delivering up his mind's possessions were getting almost insuperable. In 1908 he resigned his Professorship, in the hope that release from the heavy duties of lecturing and teaching might expedite matters.

VIII

During his twenty-three years as Professor, he took part in three important movements, which deserve separate mention—the foundation of the British Economic Association (now the Royal Economic Society), the Women's Degrees Controversy at Cambridge, and the establishment of the Cambridge Economics Tripos.

1. The circular entitled "Proposal to Form an English

¹ They were stolen by a local post-mistress in the Tyrol for the sake of the stamps on the envelope.

Economic Association," which was the first public step towards the establishment of our own body, was issued on Oct. 24, 1890, over the sole signature of Alfred Marshall, though, of course, with the co-operation of others.¹ It invited all lecturers on Economics in any University or public College in the United Kingdom, the members of the Councils of the London, Dublin and Manchester Statistical Societies, and the members of the London Political Economy Club, together with a few other persons, including members of the Committee of Section F of the British Association, to attend a private meeting at University College, London, on Nov. 20, 1890, under the Chairmanship of Lord Goschen, the Chancellor of the Exchequer, "to discuss proposals for the foundation of an Economic Society or Association, and, in conjunction therewith, of an Economic journal." This initial circular letter lays down the general lines which we have actually pursued during the thirty-four years of our existence.² The only vocal dissident to the proceedings was Mr. G. Bernard Shaw,³ who, whilst approving everything else, suggested, "with all respect to Mr. Goschen, that the head of the Association should not be a gentleman who was identified with any political party in the State." It is interesting to record that of the original members of our Council, elected thirty-four years ago, the following still

¹ Marshall signed, I think, primarily in his capacity as President of the Economics Section of the British Association for 1890, at that year's meeting of which the need for the establishment of an Economic journal had been strongly urged.

² The chief difference of opinion, discovered at the outset, regarding the Society's scope, was indicated as follows: "Almost the only question on which a difference of opinion has so far shown itself is whether or not the Association should be open to all those who are sufficiently interested in Economics to be willing to subscribe to its funds. . . . There are some who think that the general lines to be followed should be those of an English 'learned Society,' while others would prefer those of the American Economic Association, which holds meetings only at rare intervals, and the membership of which does not profess to confer any sort of diploma." At the meeting a resolution was carried unanimously, proposed by Mr. Courtney and supported by Professor Sidgwick and Professor Edgeworth, "that any person who desires to further the aims of the Association, and is approved by the Council, be admitted to membership." The wording of our constitution shows some traces of compromise between the two ideas, but in practice the precedent of the American Economic Association has always been followed.

³ Mr. Bernard Shaw was active in the economic world in those days. In 1888 Sidgwick, who was President of the Economics Section of the British Association in that year, wrote: "The Committee had invited a live Socialist, red-hot 'from the streets,' as he told us, who sketched in a really brilliant address the rapid series of steps by which modern society is to pass peacefully into social democracy. . . . There was a peroration rhetorically effective as well as daring. . . . Altogether a noteworthy performance—the man's name is Bernard Shaw. Myers says he has written books worth reading." (*Henry Sidgwick: a Memoir*, p. 497.)

hold office: Professor Bastable, Dr. Bonar, Professor Edgeworth, Professor Foxwell, Professor Nicholson, Mr. Price, and Sir H. Llewelyn Smith.

2. The controversy about admitting women to degrees, which tore Cambridge in two in 1896, found Marshall in the camp which was opposed to the women's claims. He had been in closest touch with Newnham since its foundation, through his wife and through the Sidgwicks. When he went to Bristol, he had been, in his own words, "attracted thither chiefly by the fact that it was the first College in England to open its doors freely to women." A considerable proportion of his pupils had been women. In his first printed essay (on "The Future of the Working Classes," in 1873), the opening passage is an eloquent claim, in sympathy with Mill, for the emancipation of women. All Mill's instances "tend to show," he says in that paper, "how our progress could be accelerated if we would unwrap the swaddling-clothes in which artificial customs have enfolded woman's mind and would give her free scope womanfully to discharge her duties to the world." Marshall's attitude, therefore, was a sad blow to his own little circle, and, being exploited by the other side, it played some part in the overwhelming defeat which the reformers eventually suffered. In his taking this course Marshall's intellect could find excellent reasons. Indeed the lengthy fly-sheet, which he circulated to members of the Senate, presents, in temperate and courteous terms, a brilliant and perhaps convincing case against the complete assimilation of women's education to that of men. Nevertheless, a congenital bias, which by a man's fifty-fourth year of life has gathered secret strength, may have played a bigger part in the conclusion than the obedient intellect.

3. Lastly there are Marshall's services in the foundation of the Cambridge School of Economics.

When Marshall came back to Cambridge in 1885, papers on Political Economy were included both in the Moral Sciences Tripos and in the History Tripos.¹ The separate foundation of these two schools some twenty years earlier had worked a great revolution in liberalising the studies of the University.² But, almost

¹ At Marshall's lectures in the later 'eighties, apart from students from other departments and B. A.'s who might be attracted out of curiosity about the subject, there would be a dozen or less Moral Science students and two dozen or less History students.

² Marshall summarised the history of the matter as follows in his *Plea for the Creation of a Curriculum in Economics* (1902):—"In foreign countries economics has always been closely associated with history or law, or political science, or some combination of these studies. The first (Cambridge) Moral Sciences Examination (1851-1860) included ethics, law, history, and economics; but not

as soon as he was Professor, Marshall felt strongly that the time had come for a further step forward; and he particularly disliked the implication of the existing curriculum, that Economics was the sort of subject which could be satisfactorily undertaken as a subsidiary study. Immediately that he was back in Cambridge in 1885 he was in rebellion against the idea that his lectures must be adapted to the requirements of an examination of which Economics formed but a part.¹ His Inaugural lecture constituted, in effect, a demand that Economics should have a new status; and it was so interpreted by Sidgwick. The following declaration from that lecture is of some historical importance as almost the first blow in the struggle for the independent status which Economics has now won almost everywhere :

“There is wanted wider and more scientific knowledge of facts: an organon stronger and more complete, more able to analyse and help in the solution of the economic problems of the age. To develop and apply the organon rightly is our most urgent need; and this requires all the faculties of a trained scientific mind. Eloquence and erudition have been lavishly spent in the service of Economics. They are good in their way; but what is most wanted now is the power of keeping the head cool and clear in tracing and analysing the combined action of many combined causes. Exceptional genius being left out of account, this power is rarely found save amongst those who have gone through a severe course of work in the more advanced sciences. Cambridge has more such men than any other University in the world. But, alas! few of them turn to the task. Partly this is because the only curriculum in which Economics has a very important part to play is that of the Moral Sciences Tripos. And many of those who are fitted for the highest and hardest economic work are not attracted by the metaphysical studies that lie at the threshold of that Tripos.”

This claim of Marshall's corresponded to the conception of the subject which dominated his own work. Marshall was the first great economist *pur sang* that there ever was; the first who devoted his life to building up the subject as a separate science,

mental science or logic. In 1860, however, philosophy and logic were introduced and associated with ethics; while history and political philosophy, jurisprudence and political economy formed an alternative group. In 1867 provision was made elsewhere for law and history; and mental science and logic have since then struck the keynote of the Moral Sciences Tripos.”

¹ For his contentions with Sidgwick about this (and for a characteristic specimen of Sidgwick's delightful and half-humorous reaction to criticism) see *Henry Sidgwick: a Memoir*, p. 394.

standing on its own foundations, with as high standards of scientific accuracy as the physical or the biological sciences. It was Marshall who finally saw to it that "never again will a Mrs. Trimmer, a Mrs. Marcet, or a Miss Martineau earn a goodly reputation by throwing economic principles into the form of a catechism or of simple tales, by aid of which any intelligent governess might make clear to the children nestling around her where lies economic truth."¹ But—much more than this—after his time Economics could never be again one of a number of subjects which a Moral Philosopher would take in his stride, one Moral Science out of several, as Mill, Jevons, and Sidgwick took it. He was the first to take up this professional, scientific attitude to the subject, as something above and outside current controversy, as far from politics as physiology from the general practitioner.

As time went on, Political Economy came to occupy, in Part II of the Moral Sciences Tripos, a position nearer to Marshall's ideal. But he was not satisfied until, in 1903, his victory was complete by the establishment of a separate School and Tripos in Economics and associated branches of Political Science.²

Thus in a formal sense Marshall was Founder of the Cambridge School of Economics. Far more so was he its Founder in those informal relations with many generations of pupils, which played so great a part in his life's work and in determining the course of their lives' work.

To his colleagues Marshall might sometimes seem tiresome and obstinate; to the outside world he might appear pontifical or unpractical; but to his pupils he was, and remained, a true sage and master, outside criticism, one who was their father in the spirit and who gave them such inspiration and comfort as they drew from no other source. Those eccentricities and individual ways, which might stand between him and the world, became, for them, part of what they loved. They built up sagas round him (of which Professor Fay is, perhaps, the chief repository), and were not content unless he were, without concession, his own unique self. The youth are not satisfied, unless their Socrates is a little odd.

It is difficult to describe on paper the effect he produced or

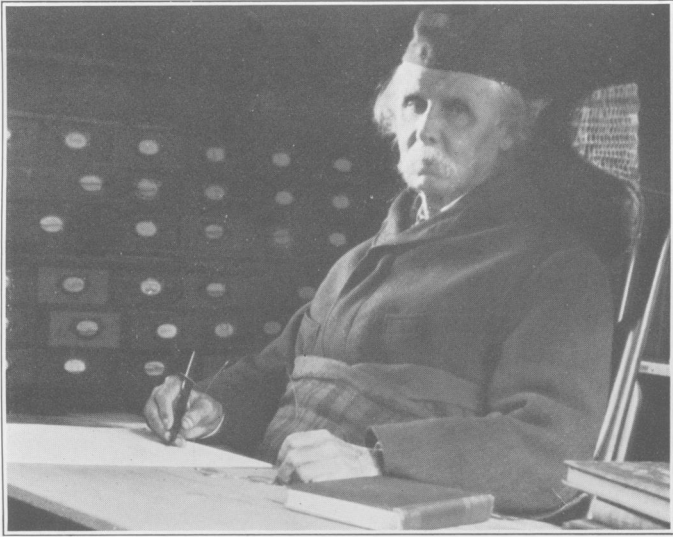
¹ From his article "The Old Generation of Economists and the New," *Quarterly Journal of Economics*, Jan. 1897.

² Sidgwick had been finally converted to the idea in 1900, shortly before his death. Marshall's ideals of economic education are set forth in his "Plea for the Creation of a Curriculum in Economics" and his "Introduction to the Tripos in Economics. . . ."

his way of doing it. The pupil would come away with an extraordinary feeling that he was embarked on the most interesting and important voyage in the world. He would walk back along the Madingley Road, labouring under more books, which had been taken from the shelves for him as the interview went on, than he could well carry, convinced that here was a subject worthy of his life's study. Marshall's double nature, coming out informally and spontaneously, filled the pupil seated by him with a double illumination. The young man was presented with a standard of intellectual integrity, and with it a disinterestedness of purpose, which satisfied him intellectually and morally at the same time. The subject itself had seemed to grow under the hands of master and pupil, as they had talked. There were endless possibilities, not out of reach. "Everything was friendly and informal," Mr. Sanger has written of these occasions (*Nation*, July 19, 1924), "there was no pretence that economic science was a settled affair—like grammar or algebra—which had to be learnt, not criticised; it was treated as a subject in the course of development. When once Alfred Marshall gave a copy of his famous book to a pupil, inscribed 'To —, in the hope that in due course he will render this treatise obsolete,' this was not a piece of mock modesty, but an insistence on his belief that economics was a growing science, that as yet nothing was to be considered as final."

It must not be supposed that Marshall was indiscriminating towards his pupils. He was highly critical and even sharp-tongued. He managed to be encouraging, whilst at the same time very much the reverse of flattering. Pupils, in after life, would send him their books with much trepidation as to what he would say or think. The following anecdote of his insight and quick observation when lecturing is told by Dr. Clapham: "You have two very interesting men from your College at my lecture," he said to a College Tutor. "When I come to a very stiff bit, A. B. says to himself, 'This is too hard for me: I won't try to grasp it.' C. D. tries to grasp it but fails,"—Marshall's voice running off on to a high note and his face breaking up into his smile. It was an exact estimate of the two men's intelligences and tempers.

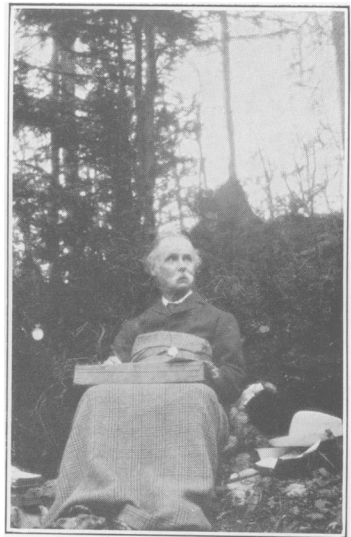
It is through his pupils, even more than his writings, that Marshall is the father of Economic Science as it exists in England to-day. So long ago as 1888, Professor Foxwell was able to write: "Half the economic chairs in the United Kingdom are occupied by his pupils, and the share taken by them in general



(In his garden shelter at Cambridge) 1920.



1913.



(In the Tyrol) 1909.

ALFRED MARSHALL.

economic instruction in England is even larger than this.”¹ To-day through pupils and the pupils of pupils his dominion is almost complete. More than most men he could, when the time came for him to go away, repeat his *Nunc Dimittis*, on a comparison of his achievement with the aim he had set himself in the concluding sentence of his Inaugural Lecture in 1885: “It will be my most cherished ambition, my highest endeavour, to do what with my poor ability and my limited strength I may, to increase the numbers of those whom Cambridge, the great mother of strong men,² sends out into the world with cool heads but warm hearts, willing to give some at least of their best powers to grappling with the social suffering around them; resolved not to rest content till they have done what in them lies to discover how far it is possible to open up to all the material means of a refined and noble life.”

IX

Marshall retired from the Chair of Political Economy at Cambridge in 1908, aged sixty-six. He belonged to the period of small salaries and no pensions. Nevertheless he had managed out of his professorial stipend (of £700, including his fellowship), which he never augmented either by examining or by journalism,³ to maintain at his own expense a small lending library for undergraduates, to found a triennial Essay Prize of the value of £60⁴ for the encouragement of original research, and privately to pay stipends of £100 a year to one, or sometimes two, young lecturers for whom the University made no provision and who could not have remained otherwise on the teaching staff of the School of Economics. At the same time, with the aid of receipts from the sales of his books,⁵ he had saved just sufficient to make retirement financially possible. As it turned out, the receipts from his books became, after the publication of *Industry and Trade*, so con-

¹ “The Economic Movement in England,” *Quarterly Journal of Economics*, Vol. II. p. 92.

² It must be recorded, in the interests of impartiality, that Dr. Jowett took strong exception to this phrase.

³ All his many services to the State were, of course, entirely unpaid.

⁴ In 1913 he transferred to the University a sufficient capital sum to provide an equivalent income in perpetuity.

⁵ He always insisted on charging a lower price for his books than was usual for works of a similar size and character. He was a reckless proof-corrector, and he kept matter in type for years before publication. Some portions of *Industry and Trade*, which he had by him in proof for fifteen years before publication, are said to constitute a “record.” He never regarded books as income-producing objects, except by accident.

siderable that, at the end of his life, he was better off than he had ever been; and he used to say, when Macmillan's annual cheque arrived, that he hardly knew what to do with the money. He has left his Economic library to the University of Cambridge, and most of his estate and any future receipts from his copyrights are also to fall ultimately to the University for the encouragement of the study of Economics.

Freed from the labour of lecturing and from the responsibility for pupils,¹ he was now able to spend what time and strength were left him in a final effort to gather in the harvest of his prime. Eighteen years had passed since the publication of the *Principles*, and masses of material had accumulated for consolidation and compression into books. He had frequently changed his plans about the scope and content of his later volumes, and the amount of material to be handled exceeded his powers of co-ordination. In the preface to the fifth edition of the *Principles* (1907) he explains that in 1895 he had decided to arrange his material in three volumes: I. *Modern Conditions of Industry and Trade*; II. *Credit and Employment*; III. *The Economic Functions of Government*. By 1907 four volumes were becoming necessary. So he decided to concentrate upon two of them, namely: I. *National Industry and Trade*; and II. *Money, Credit and Employment*. This was the final plan, except that, as time went on, *Employment* was squeezed out of the second of these volumes in favour of *International Trade or Commerce*. Even so, twelve more years passed by, before, in his seventy-seventh year, *Industry and Trade* was published.

During this period the interruptions to the main matter in hand were inconsiderable. He wrote occasional letters to *The Times*—on Mr. Lloyd George's Budget (1909), in controversy with Professor Karl Pearson on "Alcoholism and Efficiency" (1910), on "A Fight to a Finish" and "Civilians in Warfare" on the outbreak of war (1914), and on Premium Bonds (1919). He wrote to the *Economist* in 1916 urging increased taxation to defray the expenses of the war; and in 1917 he contributed a chapter on "National Taxation after the War" to *After-War Problems*, a volume edited by Mr. W. H. Dawson.

Marshall's letters to *The Times* on the outbreak of war are of some interest. When he was asked, before war was actually declared, to sign a statement that we ought not to go to war

¹ He still continued, up to the time of the war, to see students in the afternoons—though perhaps former pupils (by that time young dons) more than newcomers.

because we had no interest in the coming struggle, he replied : " I think the question of peace or war must turn on national duty as much as on our interest. I hold that we ought to mobilise instantly, and announce that we shall declare war if the Germans invade Belgium ; and everybody knows they will." For many years he had taken seriously Pan-Germanic ambitions ; and he headed his letter " A Fight to a Finish." Thus he took up a definitely anti-pacifist attitude, and did not fluctuate from this as time went on. But he was much opposed to the inflaming of national passions. He remembered that he had " known and loved Germany," and that they were " a people exceptionally conscientious and upright."¹ He held, therefore, that " it is our interest as well as our duty to respect them and make clear that we desire their friendship, but yet to fight them with all our might." And he expressed " an anxiety lest popular lectures should inflame passions which will do little or nothing towards securing victory, but may very greatly increase the slaughter on both sides, which must be paid as the price of resisting Germany's aggressive tendencies." These sentiments brought down on him the wrath of the more savage patriots.

At last, in 1919, *Industry and Trade* appeared, a great effort of will and determination on the part of one who had long passed the age when most men rest from their labours.

It is altogether a different sort of book from the *Principles*. The most part of it is descriptive. A full third is historical and summarises the results of his long labours in that field. The co-ordination of the parts into a single volume is rather artificial. The difficulties of such co-ordination, which had beset him for so many years, are not really overcome. The book is not so much a structural unity, as an opportunity for bringing together a number of partly related matters about which Marshall had something of value to say to the world. This is particularly the case with its sixteen Appendices, which are his device for bringing to birth a number of individual monographs or articles. Several of these had been written a great number of years before the book was issued. They were quite well suited to separate publication, and it must be judged a fault in him that they were hoarded as they were.

¹ " Those," he wrote to *The Times* on August 22, 1914, " who know and love Germany, even while revolted at the hectoring militarism which is more common there than here, should insist that we have no cause to scorn them, though we have good cause to fight them. . . . As a people I believe them to be exceptionally conscientious and upright, sensitive to the calls of duty, tender in their family affections, true and trusty in friendship. Therefore they are strong and to be feared, but not to be vilified."

The three books into which the volume is divided would, like the Appendices, have suffered very little if they had been published separately. Book I., entitled *Some Origins of Present Problems of Industry and Trade*, is a history of the claims to industrial leadership of England, France, Germany and the United States mainly during the second half of the nineteenth century. Book II., on *Dominant Tendencies of Business Organisation*, whilst not definitely historical, is also in the main an account of the evolution of the forms of Business Organisation during the second half of the nineteenth century. Book I. is an account of the economic evolution of that period considered nationally; Book II. is an account of it considered technically. Book III., on *Monopolistic Tendencies: their Relations to Public Well-being*, deals in more detail with the special problems which arose in regard to Transport and to Trusts, Cartels and Combinations during the same period.

Thus such unity as the book possesses derives from its being an account of the forms of individualistic capitalism as this had established itself in Western Europe at about the year 1900, of how they came to pass, and of how far they served the public interest. The volume as a whole also serves to illustrate what Marshall was always concerned to emphasise, namely the transitory and changing character of the forms of business organisation and of the shapes in which economic activities embody themselves. He calls particular attention to the precarious and impermanent nature of the foundations on which England's industrial leadership had been built up.

The chief value of the book lies, however, in something less definite and more diffused than its central themes. It represents the fruits of Marshall's learning and ripe wisdom on a host of different matters. The book is a mine rather than a railway—like the *Principles*, a thing to quarry in and search for buried treasure. Like the *Principles*, again, it appears to be an easy book; yet it is more likely, I believe, to be useful to one who knows something already than to a beginner. It contains the suggestions, the starting points for many investigations. There is no better book for suggesting lines of original inquiry to a reader so disposed. But for the ignorant the broad generalisations of the book are too quiet, smooth, urbane, undogmatic, to catch him.

Industry and Trade was a remarkable success with the public. A second edition was called for immediately, and, by the end of 1923, 12,000 copies had been printed. The fact that it was reaching wide circles of readers and met with no damaging

criticisms was a cause of great encouragement and consolation to the aged author, who could feel that, after all, he had not been prevented by time, the enemy, from delivering his words to the world.

But, all the same, time's wingèd chariot was hurrying near. "Old age," as he wrote in the Preface to *Industry and Trade*, "indicates that my time for thought and speech is nearly ended." The composition of great Treatises is not, like that of great pictures, a work which can be continued into extreme old age. Much of his complete scheme of ordered knowledge would never be delivered. Yet his determination and his courage proved just equal to the publication of one more volume.

His powers of concentration and of memory were now beginning to fail somewhat rapidly. More and more he had to live for the book alone and to save for that every scrap of his strength. Talk with visitors tired him too much and interfered too seriously with his power of work. More and more Mrs. Marshall had to keep them away from him, and he lived alone with her, struggling with Time. He would rest much, listening to his favourite melodies on the auto-piano, which was a great solace to him during the last ten years of his life, or hearing Mrs. Marshall read over again a familiar novel. Each night he walked alone in the dark along the Madingley Road. On his seventy-eighth birthday he said that he did not much want a future life. When Mrs. Marshall asked him whether he would not like to return to this world at intervals of (say) a hundred years, to see what was happening, he replied that he should like it from pure curiosity. "My own thoughts," he went on, "turn more and more on the millions of worlds which may have reached a high state of morality before ours became habitable, and the other millions of worlds that may have a similar development after our sun has become cool and our world uninhabitable."¹ His greatest difficulty, he said, about believing in a future life was that he did not know at what stage of existence it could begin. One could hardly believe that apes had a future life or even the early stages of tree-dwelling human beings. Then at what stage could such an immense change as a future life begin?

Weaknesses of digestion, which had troubled him all his life, increased in later years. In September, 1921, in his eightieth year, he made the following notes:—"Tendency of work to bring on feeling of pressure in the head, accompanied by weariness, is increasing; and it troubles me. I must work on, so far as strength permits, for about two full years (or say four years of half-time) if that is allowed to me: after that, I can say 'Nunc dimittis.'

¹ Cf. the remarkable footnote to p. 101 of *Money, Credit and Commerce*.

I care little for length of life for its own sake. I want only so to arrange my work as to increase my chance of saying those things which I think of chief importance."

In August, 1922, soon after his eightieth birthday, *Money, Credit and Commerce* was finished, and it was published in the following year, 1923. The scope of the volume differed from his design, in that it did not include "a study of the influences on the conditions of man's life and work which are exerted by the resources available for employment." But he managed to bring within the covers of a book his chief contributions to the theories of Money and of Foreign Trade. The book is mainly pieced together from earlier fragments, some of them written fifty years before, as has been recorded above, where also the nature of his main contributions to these subjects have been summarised. It shows the marks of old age in a way which *Industry and Trade* did not. But it contains a quantity of materials and ideas, and collects together passages which are otherwise inaccessible to the student or difficult of access. "If much of it might have been written in the 'eighties of last century," Professor Edgeworth wrote of it in the *ECONOMIC JOURNAL*, "much of it will be read in the 'eighties of this century."

"Although old age presses on me," he wrote in the Preface to *Money, Credit and Commerce*, "I am not without hopes that some of the notions which I have formed as to the possibilities of social advance may yet be published." Up to his last illness, in spite of loss of memory and great feebleness of body, he struggled to piece together one more volume. It was to have been called *Progress: its Economic Conditions*. But the task was too great. In a way his faculties were still strong. In writing a short letter he was still himself. One day in his eighty-second year he said that he was going to look at Plato's *Republic*, for he would like to try and write about the kind of Republic that Plato would wish for, had he lived now. But though, as of old, he would sit and write, no advance was possible.

In these last days, with deep-set and shining eyes, wisps of white hair, and black cap on his head, he bore, more than ever, the aspect of a Sage or Prophet. At length his strength ebbed from him. But he would wake each morning, forgetful of his condition and thinking to begin his day's work as usual. On July 13, 1924, a fortnight before his eighty-second birthday, he passed away into rest.

J. M. KEYNES

Note.—There are several allusions in the above to a "Bibliographical Note." It has proved necessary, however, to postpone the publication of this until the December *JOURNAL*.