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Economic Rent and The Marginal Expenses of Production. (1)

D. H. Buchanan.

After a century and a half of discussion there is no part of the theory of value about which there is greater diversity of opinion than there is about that part which relates to the connection between the economic rent of a natural agent and the marginal expenses of production of the commodity produced upon it. If an inquirer reads from a half-dozen of the best known writers on this subject he is plunged into a mass of conflicting opinions so far apart, in both original presuppositions and final conclusions, that he either turns away in disappointment or arrives at a theory of value so one-sided as to be about equal to no theory at all. Diversity of opinion on this subject is particularly unsettling to all value theory because it halts the explanation in one of its most essential steps, namely, in showing what are the marginal expenses of production.

The first reason for writing an essay on this subject must be to attempt to throw light upon this most troublesome part of value theory. A second, and closely related reason is to attempt to throw light upon that part of the Distribution of Wealth which deals with the economic rent of a natural agent.

The writer believes that it is now possible to judge of some of the special influences which have tended to cause disagreement in the treatment of this question. He also believes that it is now possible to formulate from well established elements in modern marginal economics a more satisfactory theory than has yet been offered. This paper will attempt to indicate some of the principal causes

(1) The present writer published a paper on " A Modification of the Ricardian Theory of Rent " in this magazine for May, 1915. The paper offered here is sufficient proof that he now considers the position taken at that time as inadequate.

of past confusion and to suggest, in a very preliminary fashion, some considerations which will clarify the situation. Only a part of the ground, however, can be touched in the present article. That which is left to a later treatment will be indicated presently.

It is impossible to completely classify all the theories which have been offered on this subject. However, there are three groups of theories which include those which are most common.

(1) There are the so-called Ricardian theories which state that, " Rent forms no part of the expenses of production; that is, it forms no part of those expenses of production which affect price. " (1)

(2) There are the theories which, more or less exactly, follow Jevons in saying that, " --so far as cost of production regulates the values of commodities wages must enter into the calculation on exactly the same fooitng as rent ". (2)

(3) There is the group of theories which, more or less exactly, agree with Seager. These theories divide land into different groups according to the uses to which it is put and then divide rent into two kinds generally called " differential " and " marginal " rents. The " marginal " rent is that paid for a unit of the poorest land for the given use. The " differential " rent is the excess above this " marginal " rent which must be paid for a unit of superior land for the same use. Seager says: — " The differential element is an expense of production only to enterprisers using superior land for the given purpose, while the marginal element must be paid by all enterprisers engaged in the given branch of production and hence figures as an element in the normal expense of production." (3)

The above is sufficient to indicate the very unsettled condition of theory on this point. There are

(1) Taussig, Principles of Economics, vol. II. page 56.
(2) Jevons, The Theory of Political Economy, Third Ed., Preface, page xlvi.
(3) Seager, Principles of Economics, page 240.

numerous reasons for the failure to approach agreement but two reasons have been especially influential.

In the first place, much disagreement has arisen from the fact that, in a very large number of cases, writers have discussed different questions when they believed themselves to be discussing the same question. Misunderstanding about the question at issue has been the principal source of disagreement between the advocates of theories one and two above. That is, Jevons and his group have usually discussed a different question from that discussed by Ricardo and his group. This is a bold assertion: but an examination of the works of the two groups of writers will amply establish the truth of it. The Ricardians-, let us include in that group, West, Malthus, and Ricardo-, (1) discussed the relation between the economic rent of land and the price of agricultural produce in general as opposed to manufactures and other products coming from urban districts. Jevons, and those with him who have taken up the position directly opposite, have usually discussed an entirely different question. They have usually discussed the relation between the economic rent of land and the price of a particular rural or urban product. The Ricardians were concerned in the adjustment of the conflicting interests of the principal classes in the England of their day. They all wrote in connection with the corn law discussion of 1813-1815 and as economic statesmen rather than as formulators of a complete economic theory. Jevons and those taking something of his ground, on the other hand, have written under entirely diffecent conditions and with an entirely different purpose. Their task has been that, not of the economic statesman but of the economic philosopher. They were not applying economic reasoning to the solution of a practical and isolated problem but were attempting to formulate a theory which should explain the relation between economic rent of land and the price of any

(1) Some may feel that this limits the group too much; but it has the advantage of our knowing that Ricardo considered that both of these, taught the "true doctrine of rent". See Author's Preface, Ricardo's Principles of Political Economy & Taxation.

particular commodity whether it came from urban or rural land. The Ricardians classed all rural commodities under the head of "raw produce" and considered it in opposition to urban commodities. From the selling price of rural commodities, rent was paid. From the selling price of urban commodities, no rent, so far as their problem was concerned, was paid. Their opponents divided "raw produce" into a host of separate commodities, as also "manufactures" and all the other groups, and thought of each separate commodity requiring land its for production. In spite of this complete difference of purpose and point of view between these two groups of writers the fact has been hinted at by only a very few writers: in no case known to the present writer has the full effect of this difference been indicated. The present paper will attempt to indicate some of the causes of this misunderstanding and to make some suggestions towards clarifying the confused situation to which it has led.

We have stated that this misunderstanding had been a particular source of disagreement between the proponents of theories one and two mentioned at the beginning of this paper. We have also said that there were two main reasons for the failure of writers to agree upon the theory of this subject. The first of these is this misunderstanding. The present paper is to pass by theory three and the second source of disagreement. That must be treated at a later time. For the present it is sufficient to say that the third theory is not satisfactory, principally because it, together with the theories of some other writers, is built upon an inadequate and inconsistent use of the term "marginal." The term "marginal" has frequently been used in economic literature in two distinct and unrelated senses. One of those senses makes "marginal" mean the poorest in quality of a number of units of a good, or of a producing agents. The other makes it refer to the last of a group of units, all of which are equal in quality and, therefore, interchangeable, which will be taken for some use. But this (along with a great deal of other interesting theoretical & historical matter mnst be dismissed) for the present. Let us turn to the task mapped out for this paper.

A. necessary preliminary will be the definition of some of the principal terms and an indication of the point of view with which we work.

By "economic rent" we mean the exchange value, under perfect competition, of the annual, or other periodal, use of those powers of a natural agent which are not destroyed in the ordinary processes of production. These powers are mainly due to such facts as climate, location, and subsoil. They are not normally in need of replacement and are considered in contrast to those instruments which do need constant replacement. J. B. Clark makes the distinction clear as follows: —

"The real differenee between the rent of a piece of land and that of a building, machine, vehicle, or any similar instrument arises from the fact that the land is not going to destruction and the artificial instrument is. - - whatever there is in the soil that suffers no deterioration from any amonnt of use is the land with which political economy has to deal." (1)

The competitive payment for the use of these powers of the land is economic rent.

By "marginal expenses of production" we mean the necessary expense of producing those units of the supply of the commodity in question which are only barely drawn out by the price normally offered. Those units are only barely drawn out because the normal price is just sufficient to reward the productive agents required at their ordinary rate. Alfred Marshall defines marginal expenses of production clearly as follows: —

"- - it is the cost of production of those goods which are on the margin of not being produced at all, and which would not be produced if the price to be got for them were expected to be lower." (2)

In this quotation Marshall uses the phrase "cost of production" while we use "expenses of production". In other places Marshall does the same, applying that term to the "-sums of money that have to be paid for these efforts and sacrifices" required for the production of any article. (1)

(1) J. B. Clark, Essentials of Economic Theory, pages 179-180.
(2) Alfred Marshall, Principles of Economics, 7th Ed., page 373.

These definitions are very important but the point of view with which we take up our task is perhaps more important, for differences in point of view have led to much confusion in the treatment of problems in this field.

We may state first of all that the problems of the marginal analyst cannot be made simple and easy. Some writers have erred in looking at the conditions of supply for one commodity alone, forgetting that the conditions of supply or demand for almost every commodity are affected by any change in the conditions of supply or demand for almost any other. Some have written as if the marginal expenses of production of any commodity governed its exchange value. We must be careful to avoid any of these too narrow conceptions of the task before us.

We must remember first, that exchange value is only a ratio: that the essential thing about it is that a certain quantity (bulk or weight) of one commodity exchanges for a certain quantity of another commodity. Prices are usually thought of as being necessarily expressed in money. But money is only a convenient common denominator, so far as a "Theory of Exchange" is concerned. The essential thing in an explanation of exchange value is not to explain why a bushel of wheat exchanges for two dollars while a yard of silk cloth of a certain grade exchanges for four dollars, but rather why two bushels of wheat have the same power over other commodities in exchange as one yard of such silk cloth has.

We must also not attempt to isolate the influences making for the purchase and production of any one commodity: for the decision to produce one commodity is affected in numerous ways by the opportunities for producing, and the desires for consuming, others. There is first the question as to

(1) Ibid., page 339.

which commodity can most advantageously be produced. After that decision is made there is the question of how much of each commdity shall be produced. In fact, the commodity and the amount of it which will be produced can be decided only after the "whole conditions of demand and supply" have been taken into account. That is, producers consider the different commodities wanted and the intensities with which each is wanted by all the consumers: also the purchasing powers of all the persons wanting each commodity. They consider all the possibilities of production possible with the agents which it is possible for them to get under control. Each entrepreneur, taking these conditions of demand and supply, undertakes to so proportion his agents into productive organizations and among the different kinds of products as will give him the largest net return. The efforts of all entrepreneurs to purchase the uses of agents of production and put them to work in the places in which they will earn the largest returns results in all the several commdities being normally brought to market in fairly regular supplies. Since demands remain, as producers expect, fairly constant in period after period the exchange relations between the varions commodities remain fairly constant. This is true because commodities, once produced and put on the market, tend always to exchange in accordance with their marginal utilities. These customary supplies and exchange ratios or, if we measure them in money, prices, we call the normal supplies and normal exchange ratios and prices. These marginal utilities are not measured absolutely but are simply measured in money. If a unit of one commodity commands the same amount of money as two units of another commodity we say thet the utility of the first is greater. This does not mean that the want satisfied by one unit is twice as strong or important as the want satisfied by one unit of the other. But we are not concerned with the actual satisfactions gotten now. We want to explain the *facts of exchange* in the markets as we see them. And in that case the dollar of the poor man which is spent for something which saves his life counts no more than the dollar of the millionaire spent for a trifle.

Since commodities (normally) tend to exchange for each other at ratios determined by their marginal utilities and since marginal utilities depend upon the quantities normally supplied it is evident that the only way in which any expense of production can affect normal exchange ratios is by affecting the normal supplies. It has been said that the expense of bringing the units of any commodity which are on the margin of not being produced at all, to market governs the price of that commodity. But from what we have already said it will be clear that such cannot be true, for the amount paid in expenses of production depends in part upon the price at which the product can be sold. And also upon the amounts at which the commodities which might have been produced could have been sold. No expense of production explains the value of the commodity proudced. The essential thing in normal production and exchange is the fact that the demanders of the commodities exercise a decisive control over *the commodities which shall be produced and in what amounts.* In the face of the total possibilities of production, or conditions of supply, the total conditions of demand thus *govern* the uses to which the various agents are put. The result is a tendency towards an equilibrium, which, in a dynamic world, can never be quite complete. In this equilibrium we find that there is a number of units of each kind of productive power-, land, labor managing ability, waiting-, which are only barely induced to produce the commodity for whose production they are employed. In fact it is very often a matter of indifference to a number of units of each kind of power just how they shall be used. There is always a shifting, or tendency to shifting, on the part of some agents, from the production of one commodity to the producton of some other. This shifting of agents from use to use in these doubtful places is the operation of the forces at the margin. Considerations of advantage in the use of the powers of production as they exist at any time, so as best to meet the desires of the demanders, and thus get the highest net returns for the factors of production, is the way in which "the general conditions of demand and supply" control exchange value. If more labor or land or any other agent is applied to a given use it is because some change has taken place in the conditions of production, or in the wants or means of purchasing, of the consumers. Every agent of production is applied to all its various uses just as far as is profitable. And adjustment tends to be made until each agent adds the same net amount to the value of the product in each of its uses. The shifting of all agents to attain this end is the evident part of the working of the forces which govern prices, or exchange relations, between the different commodities.

Instead then of expecting that the "expenses at the margin" will *fix* the exchange relations between two commobities and then looking to see whether or not economic rent is one of those expenses we should go behind that fact and see whether or not those powers for which economic rent is paid are among the powers which are shifted from the production of the commodity whose marginal expenses of production are being studied. Ricardo said (to put his idea in more recent language) that "rent is not a marginal expense of producing raw produce." The more fundamental question is this: "Are those powers for which rent is paid normally shifted away from the production of raw produce?" If they are normally among the powers which shift in search of higher returns then the payment of the normal rent is necessary if they are not to be shifted away and the supply of the produce to fall below the normal amount. So *the essential thing for the study of any margin is not a consideration of expenses but a consideration of the movement of different kinds of productive power between different uses at those points where earnings are equalized and economic forces are therefore brought into equilibrium.* As Marshall says: —

> "-- We must watch the *marginal* uses, and the *mrgainal* efficiency of each agent. We must do so simply because it is only at the margin that any of those shiftings can occur by which changed relations of supply and demand manifest themselves."[1]

(1) Ibid., Page 522.

Keeping in mind what has just been said as to definition, and especially as to point of view, let us now take up this matter of the misunderstanding between the Ricardians and their most determined opponents.

Confusion between rent "considered as the price paid for the use of land," and rent considered as the price paid for the use of land for the production of some particular commodity began at least as early as with Adam Smith. In some connections it seems that the two things were distinct in his mind: in others it seems that the distinction was blurred. It is possible that some of the Ricardian and later writers recognized the distinction but none of them appear to have expressed it clearly. Adam Smith mixed his analysis of the component parts of price into wages, profit, and rent, with his classification of incomes into the same three categories. He says: —

> "Wages, profit, and rent, are the the three original sources of all revenue as well as of all exchangeable value".[1]

Cannan accounts for this confusion by reasonably conjecturing that it was due to Smith's contact with the physiocrats, who put much emphasis upon the "distribution" of the wealth periodically produced amongst the different people of the community. This author says:

> "—in all probability the book (that is Book I of The Wealth of Nations) existed in fairly complete form before Adam Smith became acquainted with the physiocratic doctrine. When this happened, he may very well have thought that his theory of prices and his observations on wages, profit, and rent made a very good theory of what the physiocrats called distribution."[2]

> "Adam Smith seems to have resolved to treat his own analysis of prices into wages, profits, and rent, as also a classificatian of incomes."[3]

(1) Wealth of Nations, Bax's Edition, Vol. I, page 53.
(2) Edwin Cannan, Theories of Production and Distribution, 2nd Ed., page 188;
(3) Wealth, page 165.

Accordingly when we examine what Smith has to say about Rent we find him using the word in at least two senses. In one set of cases it is the rent which a particular commodity is able to pay and in that case it is represented as a "component part of price". In the other case it is "considered as the price paid for the use of land" and is discussed more from the point of view of an income to one of the "Ranks of the people" for whatever commodity the land may be used. Smith represents rent in the former sense as being equalized in all the different uses to which the land is capable of being applied.(1) In the latter case he generally represents it as being a "surplus" above the "ordinary profits" on "the stock which must be employed" in producing the commopity.(2) But his differeentiation is not quite clear.

The confusion was furthered by the fact that West, Malthus, and Ricardo all wrote about rent and price in connection with a very practical political question and with certain presuppositions about the difference in the "returns" to "agriculture" and "manufacturcs" which caused them to emphasize only a particular and peculiar side of the relation between rent and price, or marginal expenses of production. That is, these writers looked at rent as payment for the general powers of the soil and took no account of the specific rents paid by different kinds of produce. Let us point out further reasons for this conclusion.

We have said that all of these writers wrote with special reference to the corn law discussions of 1813-1815. This was especially true of Ricardo and West. While Malthus wrote in this connection it seems probable that he had organized his ideas on Rent some years before:(3) but they were, at any rate collected, during that peculiar period of the extension of English cultivation to poorer soils and the more intensive working of the old lands, in order to make good

(1) Wealth of Nations, Bax's Edition, pages 154-155
(2) Ibid., pages 149-151.
(3) Nature and progess of Rent, Authors Advertisement.

the shortage of "raw produce" due to the cutting off of imports during the Napoleonic wars. A very cursory examination of the pamphlets in which the theories of these writers were first set forth makes this evident. West's essay was written "with observations shewing the impolicy of any great restriction of the importation of corn", and right after its author had read the reports of the corn committees. Furthermore, the author says that he was "induced .... to hazard this publication before the meeting of parliament" by "the importance of the principle" which "occured to" him "some years" before "to a correct understanding of many parts of the corn question".(1) Malthus' ideas were set forth in "An inquiry into the Nature and Progress of Rent" and "The Grounds of an Opinion on the Policy of Restricting the Importation of Foreign Corn." The author states in the advertisement to the former of these that it contains some notes on rent which he had collected while teaching at the East India College and that "the very near connexion of the subject...with the topics immediately under discussion" has induced him "to hasten its appearance." He speaks also, on the first page, of the "discussions which are now going on respecting the Corn Laws, and the effects of rent on the price of raw produce." Ricardo gave his first statement of the theory of rent in his "Essay on The Influence of a low Price of Corn on the Profits of Stock; shewing the Inexpediency of Restrictions on Importation: with Remarks on Mr. Malthus' Two Last Publications," that is, those two just above mentioned. All these pamphlets were published within a few weeks of each other, and within a few months after the publication of two sets of reports on Grain and the Corn Laws. All these writers published their ideas in an effort to aid in the solution of the corn law question.

The most authoritative writer on the history of English economic history in this period says, "we are indebted.... to the Corn Law controversy of 1813-15 for the Ricardian theory of rent and distribution in general. Read with the pamphlets which preceded it, Ricardo's 'Principles of Political

(1) The Application of Capital to Land, Hollander's Reprint, Page 9.

Economy and Taxation' is intelligible enough. Read without them it is the happy hunting ground of the false interpreter."(1) This latter is especially true with reference to the rent theories of those writers.

In view of these facts the beginning of an interpretation of the theories of this group is a consideration of their presuppositions. Let us see what some of them were.

In the first place writers on the corn law question were paying particular attention to agriculture. What they say of rent is likely to apply peculiarly to agricultural or rural rent. The problem was one of adjustment of conflicting interests between two classes in the community, one of which had been in a favored position and the other of which was rapidly demanding greater conside:ation. They were attempting a solution of the conflict of interest between the "landed interest" and the newer industrial and commercial populations of the cities which had grown up after the Industrial Revolution. The one "Rank of the People" gained its living by receiveing rent which was paid from the selling prices of rural produce. The other gained its living by manufacturing and trading. Some of these were "monied men" who invested their "capital" in "manufactures" or "trade." The others were workers for wages and were employed by the capitalists. The city populations were, therefore, purchasers of the very commodities which the rural populations sold. The factories required certain of the raw materials for their mills and the workers had to buy the principal rural product, food. The manufacturers were naturally in favor of cheap raw materials to be used in manufacturing and the laborers were naturally anxious for cheap food and clothing. The not unreasonable belief that wages varied with the "price of food" made their employers equally anxious to keep the price of "corn" low. Consequently when the "landed interest" sought to retain the advantages which they had enjoyed in high prices due to the exclusion of imports during the

(1) Cannan, Theories of Production and Distribution, page 388.

Napoleonic wars, by a heavy tax on imports, it was natural that the interests of the city populations should be set over against theirs.

The writers of that group did not think of talking about the relation between economic rent and the prices of urban products. Rent as they were interested in it was payment for the use of rural land. City rents were not a chief source of income to any large class in their society and they did not constitute a large element in the total selling price of the goods furnished by city populations. Entire stress was placed, therefore, upon rural rents while urban rents were ignored.

As Marshall says:—

> They supposed that "all the land will be used for agricultural purposes, with the exception of building sites, which are a small and nearly fixed part of the whole"(1)

And as Cannan also says:—

> "..merchants and manufacturers often owned the land on which shops, counting houses, and factories were built, but this was regarded as a small matter which did not suffice to turn them into 'landlords,' as the rental value of their premises would be geneally trifling in proportion to their gains as 'monied men.' Land in towns was practically ignored:"(2)

What the Ricardian writers dealt with, then, was *rural rent*. They wanted to know whether or not the payment of large sums to the landlords in rent out of the selling price of rural produce made the price of such produce higher to the city populations.

In the second place the Ricardians thought of the land having only one use. It was taken from nature and it had no alternative but to accept the return which it could gain in producing "raw produce" or to return to nature. They thought of the land having no competing use and naturally

(1) Marshall, Principles of Economics, 7th Ed., page 434.
(2) Cannan, Wealth, Pages 163-164.

thought of the return above the amount necessary to reward the non-land agents at their normal rate as a "surplus." All these writers speak of the taking up of land from nature and the need for more land, and for more intensive working of land as the popuration grows and the demand for "food" or "raw produce" increases. They make no mention of the competition of different kinds of agricultural produce for the use of the same land and do not speak of the value of particular kinds of produce. They thought of "raw produce" as one commodity.

In the third place all of these writers assume or explicitly state that the production of "manufactures" and "raw produce" are subject to different kinds of "returns." All either state or imply that agricultural production follows "diminishing returns" while "manufactures" follow at least constant returns to the units of labor and capital applied to them.(1)

What then was the picture which they had in mind and what was their problem?

They saw society divided into three main groups. As Cannan says: "Roughly speaking, ... it could be said that labourers lived on their wages, landlords on their rents, and farmers, merchants, and manufacturers on their profits."(2) They thought of "the land" being given to the production of "raw produce" and as having no alternative use. Its earning was, therefore, a "surplus" above zero which was its only alternative. The earnings of the other agents were not considered so. They had alternatives, for they could be put to either urban or rural occupations. Their earnings, being equalized in the different uses could not be looked at as a "surplus." Ricardo says:—

> "..the profits on agricultural capital cannot materially vary, without occasioning a similar variation in the profits on capital employed on manufactures and commerce."(3)

(1) West, The Application of Capital to Land, Hollander's Ed., Page 12.
Malthus, The Nature and Progress of Rent, Hollander's Ed., Pages 32-3.
On Ricardo on this point see Marshall's Principles, Page, 814.
(2) Ibid., Page 166.
(3) David Ricardo, Essay on the Influence of a Low Price of Corn on The Profits of Stock, etc., 2nd Ed., Page 7, note.

They thought of rural produce set over against urban produce. The seeling price of rural produce went to pay wages, profit, and rent. The selling price of urban produce, on the other hand, went to pay only wages and profit. Their question was: 'Does the fact that large sums are paid out of the selling price of rural produce in rent to the landlords make the unit price of such produce higher to its purchasers in the cities?'

Their reply was that the price was not high because a rent was paid but that the rent was paid because the price was high: and that the same amount of produce would be furnished regardless of whether the economic rent were paid or not. "A tax on rent would... fall wholly on landlords, and could not be shifted to any class of consumers."(1)

We have to ask whether or not these were reasonable answers. For the question with which they were dealing were they justified in saying that economic rent was an effect and not a cause of the high price of food? Is economic rent of land one of the expenses of producing those units of raw produce which are on the margin of not being produced at all? Or, if we go behind prices to the movements of productive power which result in changed supplies, marginal utilities, and exchange ratios, can we say that those powers of the land which are not normally destroyed in the processes of production are among the powers which are shifted from use to use, and by which the equilibrium of supplies of rural and urban products are brought about?

We answer that the classical position, in whichever form we state it, was the only reasonable position for their problem. If we look for the points at which raw produce is on the margin of not being produced at all we find, as they stated, that it comes from those points at which no rent is paid. That is, it comes from land which is so poor as to be able to pay no rent because the total product from working it is only barely sufficient to reward the non-land agents needed at their

(1) David Ricardo, Principles of Political Economy and Taxation, Bax's Edition, Page 154, Section 62.

ordinary rate: or it comes from the applications of those units of non-land agents which bring only sufficient extra return to reward themselves at the ordinary rate, although they work on the better pieces of land. Those units of the product from above this "intensive margin" on the better pieces of land are not on the margin of not being produced. They would surely be brought to market in spite of a fall in price: for their value would still be more than sufficient to reward the non-land agents at as good a rate as they could get elsewhere, and, at the same time, leave something for the owner of the land. The owner of the land would be glad to accept whatever was offered because his only alternative is to receive zero. On the other hand, a fall in the price of raw produce will cause the producers of those units from the "extensive and intensive margins" of production to cease. For if the former price was only sufficient to give the non-land agents employed there the normal rate with nothing for rent, then the lower price now offered will allow those agents less than they could get in urban employments. It may be that, for some reason, non-land agents from other points will be more ready to pass over to the urban occupations. But if they do so their places will be taken, normally, by those agents from the two points indicated. This will be trne because it is more advantageous to apply agents at the points above those margins. Those were the units of the supply of raw produce which were on the margin of not being produced at all, and for the production of which the price of that produce had to remain at the normal amount. As the Ricardians said, rent formed no part of their expenses of production.

So if we ask what are the agents of production which are shifted normally from use to use at the points at which the supplies of rural and urban products are kept at the equilibrium amounts. In this sense also the Ricardians' answer is right. It is the non-land agents which are so shifted from use to use. This is plain because, according to their hypothesis, the land had no alternative use. They considered rent as a strictly rural thing, and totally ignored urban rents. They thought of the earnings of non-land agents being approximately equalized in rural and urban occupations but "the land" must be used for "raw produce" or go back to nature. There was no possibility of employing it in "manufactures" or "trade." Non-land agents shifted among the different "employments" and thus brought about an approximation to equilibrium conditions, but no such shifting was possible for "the land."

Considering as they did the conflict of interest between the sellers and buyers of rural produce, the Ricardian economists were justified, in their day, in considering the rent question as one of rural land, and in supposing that rent was a negligible matter in the expense of producing those utilities furnished by the city populations. This does not say that such assumptions would be sufficieient for the construction of a complete theory of economics. But they were not concerned with that problem when they wrote on the question of the relation between rent and price. They were, as one of them said in this connection, "contributing to the public stock of knowledge . . at the time when it" was "most likely to be useful."

Let us now turn to the problem of the economic phlosophers. Theirs is the problem of formulating a "Theory of Exchange" and it must analyze the forces affecting the exchange ratios between, or prices of, all kinds of particular commodities, both urban and rural. This task was taken up vigorously by Jevons, although something had been done at it by earlier writers, especially J. S. Mill whose position was so affected by Ricardian influences in his early education and surroundings that he was unable to take up the task entirely anew.

By Jevons' time the problem of the Ricardians had been solved and generally forgotten. The corn laws had been removed and England was just becoming the "work-shop of the world". Her food supply was already pouring in from some of those distant lands in which Jevons himself had been priveledged to spend some time. His contact with the Australian mint and his bent towards analytical rather than purely practical studies made him soon aware of the limitations of the Ricardo-Mill theories considered as a complete scheme. But he was too close to the proponents of the accepted system to take those self-satisfied individuals philosophically. He considered an entirely different problem from that discussed by the Ricardians, so far as the relation between economic rent and price is concerned, although neither he nor any of his predecessors entirely differentiated the two.

James Mill and McCulloch had followed Ricardo so closely as to have seen only his problem, although the latter introduced some confusion by referring incidentally to urban rent as if it were included in the theory of Ricardo.(1) J. S. Mill is often spoken of as "transitional" in the development of economic science. That is surely true with respect to this question. He is often supposed, on ths other hand to have handed on the Ricardian theories almost intact. But he left them considerably modified, and not quite consistently stated. He appears to claim that, "Rent . . . forms no part of the cost of production which determines the value of agricultural produce."(2) But he refers to the competition of different uses for the same land and states that rent "is an element in the cost of production" in such cases.(3) He also takes up urban rents and says that ". . . since all factories are built on ground, and most of them in places where ground is peculiarly valuable, the rent paid for it must, on the average, be compensated in the values of all things made in factories."(4)

It has been suggested, and is perhaps true, that Mill did not think all these propoitions through in his mature years. It is perhaps also true that he realized more fully than those who are later

(1) McCulloch's edition of The Wealth of Nations, Page 447.
(2) J. S. Mill, Principles of Political Economy, Bk. III, Ch. 5, Sec. 2
(3) Ibid., Bk. III, Ch. 9, Sec. 1, Art. IX.
(4) Ibid., Bk. III, Ch. 4, Sec. 6

usually do, just what the presuppositions of the Ricardians were. Mill mentions urban rent and the competition of different uses for the same land: Ricardo didn't think it necessary even to mention those matters. Mill seems to have realized that their dogma that "rent does not enter into the price of corn" was only an application of their theory to a particular problem of their day and that it was not inconsistent with a theory which should maintain that, if particular kinds of products were considered, the necessity of paying rent in order to secure the required amount of land was as effective a check on the supply of such commodity as was the necessity of paying wages to secure the labor required. It seems, at any rate, that he did not consider his statements to be out of keeping with those made by Ricardo.

Jevons thought that his own theory was a direct contradiction of Ricardo's and with some justice he accuses Mill of inconsistency. But this should have led him to investigate why earlier writers had written as they had. Perhaps the principal source of confusion in the theory of this subject today is in Jevons' failinlg to investigate the purposes with which the Ricardians had written and in setting himself up as against those "wrong-headed" men.

From Jevons onward the confusion of the two problems has been almost complete. In only a few cases has the existence of two problems been recognized: and then the results have not been fully realized. In a number of cases the presuppositions and arguments used in the two problems have been hopelessly confused.

We have seen that Ricardo and his group gave the only reasonable answer to their problem. We have also seen that Jevons' and his group gave the opposite answer to their problem. We now have to ask whether theirs was a reasonable answer. Is economic rent of land one of the expenses of producing those units of a particular commodity which are on the margin of not being produced at all, when different commodities compete for the use of the same land? And to go abck of this, are those powers of land which are not in need of replacement by man among the powers which are shifted from use to use at the points at which the supplies of the different particular commodities are kept at the equilibrium amounts?

We answer that, for the problem which they discussed, these writers also gave the only true answer. They say that rent and wages enter into the calculations of marginal expenses of production of particular commodities " on exactly the same footing ". Let us look into this.

It will appear that the answer should be different in this case because the conditions of the problem are different. The essential difference in the conditions is in the fact that *in the problem of the corn-law group there was no competing use for the land, while in this problem there are such competing uses.* Ricardo never thonght of saying that the earnings of land were the same in different occupations because he thought of land as being applied to only one occupation. On the other hand, Jevons immediately makes it clear that he is thinks of the land as used for different commodities and being turned to its most advantageous uses just as Ricardo thought of labor and capital being turned. Jevons says:—

> " The principle which emerges is that each portion of land should be applied to that culture or use which yields the largest total of utility, as measured by the value of the produce, if otherwise applied there will be a loss. " (1)

Also, that competition between crops for a piece of land is " the rule ". (2)

This is just the same principle which Ricardo found with respect to labor and capital. And if he had ever considered Jevons' problem it is likely that he would have used it with respect to land. But as he saw land it furnished the income to one of the three " classes of the community "; and its

(1) Jevons, The Theory of Political Economy, 3rd Ed., Preface, page xlviii.
(2) Ibid., Preface, page xlvii.

rent was paid for the production of one important thing in the welfare of the other " classes of the community ". It produced " raw producea " and was good for nothing else. *The answers to these two questions were properly different because the questions and conditions were different.*

Let us make a few suggestions as to the results of this difference of conditions. We shall then indicate those points at which the shiftings which result in changed supplies of the different particular commodities occur and show that those powers of the land which are not normally destroyed in the processes of production are shifted in the same way that non-land powers are; and therefore that rent is one of the necessary payments for holding the normal amounts of land in the production of any commodity and hence for keeping its supply, marginal utility and price at normal.

In the first place, the production of any commodity requires some of all the different kinds of productive power. Furthermore, these different kinds of productive power may be and are, to a very large extent substituted for each other.

> " There are, for example, several ways to grow a hundred bushels of corn. One is, to use much labor with little land, making the land produce a heavy crop, but getting a small product per unit of labor. Another is to use little labor with much land, getting a comparatively light crop from the land, but enabling the labor to produce a larger amount per unit. Which is the more economical of these two ways will depend upon the relative cost of land and labor...... There are also several ways of producing a hundred yards of cloth. One is to use much labor with little machinery, driving the machinery at a high rate of speed and making it turn out a large product, but getting a comparatively small product per unit of labor. Another is to use little labor with much machinery......" (1)

(1) Carver, Distribution of Wealth, page 77-78.

Of course it would be possible to produce the one hundred yards of cloth by using a different amount of land. But it did not occur to the author of the above paragraph to suggest it. Ricardo thought too that the principal way of manufacturing was by the use of labor and machinery. He felt the land belonged in agriculture. But in Jevons' problem the land was put on the same footing as labor and capital in the matter of alterhative uses. (1)

Again, every kind of productive power is paid for according to the same principle of marginal productivity. As Marshall says :—

"Every business man .... endeavors to employ each agent up to that point at which its net product ..(i. e., net addition to the value of his total product) .. would no longer exceed the price he would have to pay for it." (2)

And as Carver says :—

"..the wages of any particular kind of labor depend upon its marginal product,.. The same law applies to the rent of land." (3)

With all the different factors paid for at their marginal productivities the total product of any concern is exhausted and there is no amount which can properly be called a "surplus." (4) In the classical problem the return to land was quite properly thought of as a "surplus". That was because all the land could earn in "raw produce" was a surplus above the zero amount which it could earn otherwise. The classical economists never thought of calling the earnings of labor or capital a "surplus", because their earnings were supposed to be equalized in the different employments to which they were able to shift. Land, having no possibility of shifting, received "what was left". But, in

(1) This is somewhat blurred by the fact of crop rotation in agriculture. But even there we find competition: for a commodity must earn its place in the rotation as well as earn its place as the sole user of the land.
(2) Marshall, Principles of Economics, 7th Ed., page 406.
(3) Carver, Distribuion of Wealth, pages 190-191.
(4) Many writers have not been sufficiently clear as to the fact that all agents are paid for at their marginal productivities and that when this is done the entire produce of a given productive organization is appropriated and there is no "surplus". Other writers have spoken as if payments according to marginal productivity were a rigid thing and that they were quite beyond any influence from higgling. Persons who have tried to secure higher rewards for certain elements in the society have been told that since earnings of every kind were determined by "marginal productivity" there was no possible way of changing the situation except by making the particular kind of power more productive in its marginal uses. But all this is due to a failure to recognize the nature of marginal productivity. Marginal product is not such a simple matter as mere arithmetic. If nature had been so obliging as to divide all kinds of productive power into unmistakably defined units that would have been true. But that is just what nature has not done. "Natura non facit saltum". The owners of the various agents put into a given productive combination must agree upon what amount shall be considered a unit of each kind of power. For this agreement must be such as to make possible the payment of all out of the total product of the concern.

There is much higgling, ostensibly over the prices to be paid. And to follow the discussions one would not know that there were such a thing as "marginal productivity" about which the economists talk so much. And in fact there is no such thing. There is marginal productivity but it is not fixed apart from human arrangements because the units of productive power are not fixed apart from human arrangements. It makes a great difference what the unit in each case is. And the bargaining for wages, rents, interest, etc., is, in the light of marginal productivity theory, only bargaining to determine how much of each kind of power shall be considered a unit. An illusdtration will make this clearer.

Suppose that 100 equally efficient laborers are employed in a factory, and that they are to be paid according to "marginal productivity". It will make a great difference whether we count the labor of one man for one hour or of one man for one day of ten hours, or of ten men for one day of ten hours as the unit of labor. The following table is illustrative.

Number of Men.	Time of working.	Units of Product.
90	1 day of ten hours.	850.
94	1 " " " "	900.
95	1 " " " "	908.
96	1 " " " "	915.
97	1 " " " "	921.
98	1 " " " "	926.
99	1 " " " "	930.
99	1 " " " " " and	931.88
1	1 " " 9 " "	
100	1 " " 10 "	932.

the problem which Jevons considered, land is in the same position with non-land agents. Like them, it is paid for at its marginal product, and like them it is able to turn to a number of different employments. (1)

This brings us to a third condition which is the same for the powers of the land which are not normally destroyed in the processes of production and for non-land agents. That is, land is shifted from use to use in search of the best returns in exactly the same manner that the other agents are shifted. The entrepreneur does not consider any one factor as central or determining the proper

The marginal productivities for the different sized units are seen to be as follows: (1) If we count 10 men for one day of ten hours as the unit of labor, the last unit adds 82 units to the product which could have been secured without it. The amount for one man for the day is 82 divided by 10, or 8.2 units. The total wage for all the men for the day is 820 units of the product, (or its value.) (2) If we count 1 man for 1 day as the unit the addition of the last unit adds 2 units to the product which could have been secured without it. The amount for one man will be 2 units. The total wage for all the men for the day will be 200. (3) If we count (1) man for 1 hour as the unit of labor, the last unit adds .12 unit to the product which could have been secured without it. The amount for one man for one day would be .12 times 10, or 1.2 units of the product. The total wage for all the men for the day will be 100 times 1.2, or 120 units of the product, (or their value.)

Other differences would de shown if the unit were taken in a different size and similar differences would appear in the calculation of the marginal product of any other agent of production as well as for labor. But these things follow no "natural" laws. The earnings of the different factors of production and the distribution of wealth is, as Mill long ago suggested, dependent upon the "laws and customs of society". "The rules by which it is determined are what the opinions and feelings of the ruling portion of the community make them--." (J. S. Mill: Principles, Bk. II, Ch. I, Section 1.) Laborers and those endeavoring to create some degree of monopoly in the control of other agents of production have fully recognized the difference which the size of the unit added or withdrawn makes to the total return of the kind of productive power which they control.

(1) This statement does not deny that certain productive agents are fitted by nature for some special line of production. But these ars exceptional cases and are, perhaps, as frequent in the case of labor as in the case of land. The earnings of those instruments should be considered separately. The great mass of commodities with which we have to deal have a large proportion of their units produced with non-specialized agents which might do practically as effeciently in some other use.

policy for the others. He is looking for gain: and he considers all the possibilities of using the agents which he controls, or can gain control of, and then follows the course which will give him the greatest total net return. Land is, here, in exactly the same condition that the other agents are in.

Fourth, the earnings of land are equalized in all its separate uses, the same as those of the other agents are equalized. Marshall states this well as follows:—

"...the uses of each agent of production are governed by the general conditions of demand in relation to supply: that is, on the one hand, by the urgency of all the uses to which the agent can be put, taken together with the means at the command of those who need it; and, on the other hand, by the available stocks of it. And equality is maintained between its values for each use by the constant tendency to shift it from uses, in which its services are of less value to others in which they are of greater value, in accordance with the principle or substitution. (1)

Fifth, the shiftings of land from use to use has exactly the same results in bringing about changes in the supplies of the separate commodities produced as do the shiftings of other agents. The changing of land from corn to cotton will adjust the supplies between corn and cotton just as the changing of non-land agents at the intensive and extensive margins of cultivation. So will the shifting of city land from the production of utilities in the form of horse-and carriage services to the production of motion pictures affect the supplies of those commodities furnished in just the same way that the training of former drivers to become machine operators would do.

These facts make it possible to make a further statement. That is, when we think of rent as the amount which a given commodity will pay for the use of a given piece of land for which others are in sharp comptition the commodities actually produced are not at all what they would be if there

(1) Marshall, Principles of Economics, pages 521-522.

were no such thing as rent. In the Ricardian problem it was true that the same things would be produced and in the same amounts whether the rent existed or not. That is, the same amonnt of "raw produce" would be brought to market because the owners of rural land had no other use to which it could be put. The city land was so insignificant as to be ignored. City commodities would still give their rewards to capital and labor and so would the country lands. The landlords could do no better otherwise so the relative supplies of city and urban produce would be the same. Their marginal utilities and exchange ratios also would remain unchanged.

But that would not be true where rent is the competitive amount from some particular commodity. Producers, now, consider the greatest possible total which they can get from all their factors of production. Then, they would consider only the greatest marginal returns to their non-and agents and different commodities would in many cases be produced. This is true because production curves do not proceed together. For instance, ten men may produce 1000 bushels of barley on a given piece of land, or the same amount of rice. But if the returns to additional labor on that land diminish rapidly from the first, after having started high, in the production of barley, while in the production of rice the returns start relatively lower and diminish slowly, the marginal product of the labor will be higher in producing rice than in the production of barley. If rents paid by particular commodities are in some way non-existent, producers will surely follow the production of rice even though the total value of the barley crop be more. For they are now interested only in the returns to non-land agents, and will employ them so as to give the highest marginal product. In fact, it would no longer be to the interest of the producer to strive for the largest total returns to all the agents. And he might produce commodities giving only a fraction of the total return received under the present system.

From what has heen said it seems that the powers of the land which are not normally destroyed in the processes of production, together with the payment of economic rent for their uses are treated on a par with the other agents of production and the payments for their uses. We find that like the non-land agents, land is necessary for all kinds of production: it may be substituted for other kinds of power: it is paid for according to its marginal productivity: it is shifted from use to use: it earns the same amounts in all its different uses: it is shifted by the entrepreneur in search of the highest return: it is influential in determining the commodities and amounts of them produced: and it is utilized in every way according to the principle of largest total gain.

It seems, then, that the payment of the normal rent to keep those powers in their customary use is as necessary as is the payment of labor at its normal wage in order to keep labor in its ordinary use. Prices are essentially a ratio of exchange and that ratio of exchange is the reciprocal of the ratio of the marginal utilities of the two commodities in the market. Now those marginal utilities depend upon the supplies of the commodities. If any supply is to be kept at the normal amount the agents customarily given to that production must be kept at their normal amounts. If labor is not paid at its normal rate in one of its uses it will leave. Its normal wage is necessary if the supply, marginal utility, and exchange ratios are to remain the same. So with land. If it is not paid at its normal rate in one of its uses it will leave. Its normal rent is necessary if the supply, marginal utility, and exchange ratio are to remain normal. The wage is thus a normal marginal expense of production of a particular commodity So is the rent.

Let us indicate the points at which special commodities are on the margin of not being produced at all.

We have stated that in the Ricardian problem the points at which raw produce was on the marginal of not being produced at all were at what are now usually called the extensive and intensive margins. That is, on no-rent land or at the intensive margin of cultivation on better pieces of land. Now the same tends to be true of any particular product, with the addition that such a commodity also has units of its supply, on the margin of not being produ ed at all, at another margin. This is on what we may call the "product changing margin". At this point economic rent is one of the necessary expenses of production.

Some commodities in most markets have some of their units produced on no-rent land. If there is a fall in the price of that commodity it is likely that those units will be discontinued, because the non-land agents working there can do better by going into some other use. Those units of the snpply are on the margin of not being produced at all and there is no rent in their expenses of production. All commodities have some of their units produced at the intensive margin. For whatever use a piece of land be turned to it has not the normal amount of non-land agents combined with it unless those agents be sufficient to work it clear up to the point at which the net additional product from the last application of non-land agents is just equal to the normal marginal product, and reward, of those agents. If the price of the commodity in question should fall those agents will cease to earn at their normal rates and some of them will be withdrawn to other uses, until a new equilibrium is formed. The units of the supply formerly produced by those agents will not be produced. They were marginal units for they were on the margin of not being produced at all.—and there was no rent in their expenses of production.

But, besides the withdrawl of non-land agents from the production of a particular commodity at these two points, there is another set of factors which would be withdrawn. This is the withdrawl of all the land and non-land agents in certain producing concerns from the production of the commodity in question. This is, indeed, the way in which supplies are readjusted for most commodities. There are times when the normal arrangements for prodnctlon and exchange are out of gear, such as after a great war, in which the people actually work all of the land less intentively and consume a less total of commodities. But the usual thing is for the land to continue to be worked with about the same degree of intensity; and for land once brought into use to stay in use. A fall in the demand for one thing is likely to be accompanied by a rise in the demand for something else, so that the total land will be worked at about the same intensity as before. The adjustment of the supplies is most commonly made by a shifting of land, together with the other agents employed with it, over to another use. Such shifting is done because that land' s marginal productivity is too low, under the change in price brought about by the fall of demand, to make it profitable to keep it in the old use. The rent is on exactly the same footing here as wages are. The entire product from such land is on the margin of not being produced at all and one of its necessary expenses was the payment for the land at its normal rent.

If the price of cotton falls some land which was in cotton changes to the production of corn. If the price of corn falls some land generally used for corn goes over to wheat. What are the considerations which cause this change? Talk to any man who is letting his land for a share of the product and he will reply that the old use wouldn' t pay the normal rent. Owners of land control the uses to which land is put as much as do owners of non-land agents. The fact is that pioducers watch the total earnings of all their agents. Then they follow the course which will give the greatest total return. The commodities produced must afford the normal rent as well as the normal wage. It is a necessity if the particular commodities are to be kept in supply at their normal amounts: and thus their marginal utilities and exchange ratios, or prices, at their normal amounts. Jevons and his associates are right in saying that "each portion of land should be appiled to that culture or use which yields the largest total of utility, as measured by the value of the produce; if otherwise applied there will be a loss."(1)

(1) The Theory of Political Economy, 3rd Ed., Preface, p. xlviii.

In considering what are the productive powers which are shifted from use to use at those points at which the supplies of the particular commodities are kept at normal, we find too, that those powers of the land which are not normally destroyed in the ordinary processes of production are shifted from use to use just as other kinds of power are, and that by the shifting of those powers, particular commodity supplies are kept at their normal equilibrium amounts.

So also if we take the matter of taxation. We found that the taxation of the rent of land used for "raw produce" in Ricardo's sense would have no effect upon the supply of that commodity and none upon its price. The same is not true if we think of the rent paid by a particular commodity. If we tax away half the economic rent of land used for, say, growing poppy, or selling alchoholic liquors, the supplies of those commodities do not remain the same. So also their marginal utilities and exchange ratios with other goods do not remain the same. The difference lies in the fact that the land considered by the Ricardians had no alternative use while that considered by Jevons had alternative uses.

This concludes our investigation of the Ricardians and those most directly opposed to them. We have found that the two groups were discussing two different questions and that, while exceptions may be taken to some of their definitions and the form in which their statements were made, both were right in the whole trend of their conclusions. Ricardo's answer was right for the problem of his day. Jevons' answer was right for a complete "Theory of Exchange."
