ure in cities, by depriving the cities of democratic control. The Boston charter is a "business" man's charter, drawn upon hard and fast "business" lines.

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## THE ECONOMIC CHARACTER OF SOIL-FERTILITY.

The article from the pen of Professor John R. Commons, entitled "The Single Tax in Theory and Practice" (vol. x, p. 1205), presents in a most seductive way a theory regarding the economic character of soil fertility which I believe to be as novel to most single taxers as it is to me. I recognize the validity of the author's claim, that his theory, if it could be sustained, would remove much opposition to the imposition of the single tax, and I therefore approached its consideration with a considerable bias in its favor. Nevertheless, and in spite also of the ability with which its distinguished author presents it, I have come to seriously doubt the soundness of the theory, and venture to formulate my reasons.

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Professor Commons' theory is that soil-fertility constitutes no element in economic land value, but is the result of individual labor and abstinence; that is, that it is capital as truly as are machines, buildings and other improvements on land. The deduction from this theory, which represents its practical value, is that agricultural land should logically be taxed on the value which it would have if its fertility were exhausted; and, of course, if no improvements had been placed upon it.

The main reasoning in support of the theory is as follows:

The essential characteristic of capital, such as a steam engine, is that its value gradually passes into its products, and that it must be repaired, maintained and renewed out of the value of its products. All this is equally true of soil-fertility. Its value goes into the crop and would gradually disappear unless maintained by the application of fertilizers. Moreover, the value of land—apart from site-value—is simply the value of the labor and capital required for clearing it; that is, it is only a capital value, and economically, therefore, it is capital.

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The analogy between steam-engines and soil-fertility, upon which the first of those arguments rests, seems to me erroneous. For the natural fertility of the soil needs neither "repair" nor "renewal," if it is "maintained" by an adequate application of fertilizers, in such uses of the soil in which fertilizers are at all necessary for the maintenance of fertility. That is, by merely maintaining it, fertility lasts forever. Can it be said of a steam-engine or any other form of man-made capital, that by merely maintaining it, it will last forever? Theoretically it may be held that by maintenance and renewal in parts, such eternal life may be given to a steam-engine, but economically it is impossible. This is clearly stated by Professor Commons; but he has overlooked that this eternal life, denied to a steam-engine, is an attribute of soil-fertility in the conditions stated.

As is correctly stated by the author, ultimately the whole virtue of a steam-engine, plus the value of its maintenance and renewals, passes into its products. But the facts set out in the foregoing paragraph point to the conclusion that no such complete absorption takes place where soil-fertility is concerned. This becomes quite clear when the following facts are considered. The application of fertilizers to soils of great fertility is not only unnecessary for many years after they are taken into cultivation, but generally is harmful. A period may, however, arise when the product would decline, unless fertilizers were applied. The application of fertilizers then maintains the product at the old rate, which, however, is more and frequently many times the quantity and value of the product which, with an equal application of fertilizers, may be obtained from the least fertile soils in use; that is, no further absorption of natural fertility takes place. The fertilizer (maintenance) added to the soil is absorbed by the product, but no further part of the natural fertility of the soil is so absorbed. In this sense fertility is an "indestructible" quality of the soil.

Moreover, while it is true that cultivation tends to diminish fertility, this is not true of other uses of soil-fertility. One important one, for instance, is that of raising and fattening sheep and growing wool. The grasses upon which the sheep feed are the product of the fertility of the soil, and therefore sheep and wool are such products. Yet the longer sheep graze over the soil the greater becomes its fertility. The product of fertility returns more fertility to the soil than it absorbs. Is there any form of capital, generally accepted as such, which similarly increases in amount or value in the course of its use in production?

Furthermore, all the generally admitted forms of capital not only disappear in their products, but disappear gradually whether they give forth products or not. They all decay even when unused. To all of them attaches the instability which is the sign of man's work. But, differing

from capital, soil-fertility neither diminishes nor decays when unused, and in many cases even increases.

One other feature must be considered. Soil fertility depends not upon one, but upon two factors; one chemical and inherent in the soil, the other rain or snow fall, and exterior to it. Land in an arid region, though possessing all the chemical elements of great fertility, is nevertheless unproductive, when the same land in a well-watered region would yield products of great value. Cultivation, far from exhausting this external element of fertility, may tend to increase it. Superficially it may appear that the value arising from this source is site-value. The slightest consideration, however, will show that this is not the case. For site-value is a social product, arising from the concentration of population, whereas the moisture element of fertility is as much a natural product as the chemical composition of the soil itself.

This leads to the final difference between a steam-engine and what it stands for, and soil-fertility. The former is the product of labor applied to land. On the other hand, the fertility of the soil is not a product of labor, but a gift of nature. Soils differ in fertility, just as steam-engines differ in productivity. But there are these further differences. All users of steam-engines can obtain the use of the most productive engines. But not all users of land can obtain the use of the most fertile soils,—just because steam-engines are man-made and therefore can be economically multiplied indefinitely, while fertile soils are not man-made and economically cannot be multiplied indefinitely. A monopoly character, therefore, adheres to more fertile soils, just as it adheres to more advantageously situated land, whereas no such monopoly attaches to even the most productive steam-engines. And just as the monopoly character of more advantageous sites expresses itself in land values, so does the monopoly character of more fertile soils.

That fertility and advantage of position combine in the production of land value may be easily seen from the following facts. Marginal land, admitted by Professor Commons to have no value, is the most advantageous land which at any time is open to rent-free use. It is, however, quite clear that advantage in use must arise from the combination of two factors, situation and fertility. Land of inferior situation, but possessing superior fertility, may be precisely as advantageous in use as land of inferior fertility but of superior situation. The true margin of cultivation, therefore, is land open to rent-free use, the combined fertility and situation of which make it more advantageous in use than other rent-free land. It follows that any land of like situation and superior fertility than marginal land must have a rental value; that is, that fertility is an element in the value of land.

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Professor Commons indicates that he applies his theory to mineral land no less than to arable land, and logically he must so apply it, and to natural forests as well. For just as fertility would gradually disappear under some forms of cultivation, unless maintained by the application of fertilizers, so a natural forest disappears as the trees are felled, unless replanting is carried on *pari passu* with the felling. That such a replanted forest is capital no one will deny; but it does not follow that the natural forest is or was capital, or that its value is capital value. For such natural forest is a gift of nature, having no cost of production. Land bearing such a forest, say of hickory or walnut trees, is of infinitely greater value than land in the same relative situation to markets—that is, having the same site-value—which bears no timber or which bears timber fit only for firewood. This additional value, not being due to either labor or abstinence, adheres in the land, and is of the same nature as site-value and should be taxed the same as site-value.

In the foregoing cases the expenditure of labor and capital can prevent the exhaustion of fertility by adding new fertility. It is, however, very different as regards mineral deposits. Neither labor nor capital can restore these deposits. More even than chemical fertility or forest growths are they a vanishing quantity and value. Therefore, Professor Commons was right in subjecting them to his theory also. For, if the theory were valid as to the former kinds of fertility, it would apply even more strongly to fertility in minerals. Are mineral deposits capital; are they or their value due to labor and abstinence? Here are two tracts of land lying side by side. On the surface both are alike, worthless scrub land of no value. But, it is discovered that underneath the surface of one of these is lodged a rich deposit of silver ore. At once this tract becomes of immense value, not on account of the small expenditure of labor and capital incurred in making the discovery, but on account of the value of the mineral which the land covers. This value, therefore, cannot be capital value, but is of the same nature as site value—i. e., an advantage adhering to the use of a particular plot of land.

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If, as I think I have shown, the value of min-

eral deposits and natural forests is land value and not capital value, in spite of the fact that this value must gradually disappear as the deposit or forest is worked—that is, that the value of the deposit or forest merges in that of its product—it must be quite clear that this characteristic is not confined to capital, but adheres to some forms of land value as well. It follows that the value of soil fertility may also be land value and not capital value, in spite of the fact that in certain circumstances it merges in the value of its products, and that other characteristics must determine its economic classification. These other characteristics I have already set out and have shown that they point clearly to the conclusion that natural soil-fertility produces land value and not in any way capital value.

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Permit me now to deal with the second of Professor Commons' arguments—namely, that apart from site-value land has no greater value than that of the labor and capital required to clear it; that is, it has only capital value. This statement seems to me entirely erroneous.

In the western district of Victoria, Australia, there are two adjoining tracts of land widely different in fertility. One, composed of a deep, volcanic soil, has for many years been used for the production of potatoes and onions, and brings an annual rental per acre of from $8 to $25 and sells at from $150 to $500 an acre. The other, consisting of a thin crust of soil overlaying heavy clay, had been used for grazing sheep till a few years ago, when it was discovered that by the application of fertilizers it might be made to yield satisfactory crops of wheat. This latter land sells at from $12 to $25 an acre, according to its distance from a railroad station. Both these tracts were originally open prairie, without trees, and therefore caused, acre for acre, a like expenditure of labor and capital to fit them for cultivation. Both are equidistant from their main market—Melbourne—and both have similar facilities for reaching it. The wide difference in their value, therefore, cannot be due to a difference in expenditure to fit them for cultivation; nor can it be due to differences in site-value. It can only be due to their difference in fertility, for that is the only feature in which they differ. I therefore must conclude that, apart from site-value, land may have a greater—and a much greater—value than that of the labor and capital expended to fit it for its use.

Let me give another example. The Government of Victoria six years ago drained a swamp (Moe Swamp) at an expenditure of $52 an acre. It sold the land to settlers at $57—that is, the cost of draining plus the adopted price for all Crown lands. The present value of this land varies from $140 an acre for the poorest, to $275 for the richest, the land being of great fertility. This swamp land is surrounded by low hills, which also are cultivated, and the value of which varies from $37 to $50 an acre. This hill land is in every respect of the same site-value as the swamp land; its cost of clearing was much greater than that of the swamp land apart from the cost of draining the latter, for it was heavily timbered. Yet, even when the cost of draining is deducted, the swamp land is of very much greater value than the hilly land, and of much greater value than its cost of clearing, draining, etc. Why? Again the answer must be, on account of its greater fertility. This again proves that, apart from site-value, more fertile land may have a value in excess of the expenditure of labor and capital necessary to fit it for use; that this excess-value is due to excess of fertility, and that excess of fertility over marginal fertility produces, not capital value, but land value.

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This, then, is the conclusion to which I must come. Marginal fertility, like marginal situation, produces no value. Excess of fertility over marginal fertility produces a value in the same way as every excess of advantage of situation over marginal situation produces a value. Both these values attach to land, are land values, and differ in almost every respect from capital value. To differentiate between these two component parts of land value when imposing taxation upon land value, therefore, is neither feasible nor just.

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Permit me now to state my conception of the practical consequences which would flow from the acceptance of Professor Commons' proposal. This proposal is to treat agricultural land as mere situation and to value it for taxation as if "the fertility of the soil were exhausted." Now take two farms having the same advantage of situation, but one of which yields twice the product of the other for every unit of labor and capital, inclusive of fertilizers, employed. I could point to much greater differences, arising purely from differing soil-fertility, but this will serve. According to the plan proposed, both farms would pay the same land-value tax per acre, yet one farmer without any more expenditure of labor and capital, would have twice the value of product to pay it from than the other. This being so, the unearned ad-

vantage which this farmer derives from the greater fertility of his land would be increased through unfair taxation. For, after payment of the tax by both, his net product would be more than twice as great as that of his neighbor, though it was only twice as great before payment of tax.

Consequently the difference in the capital value of these two lots of land would also be increased by this method of taxation, a result not consonant with the objects of the single tax as I understand it, nor with any conception of justice.

MAX HIRSCH.

## EDITORIAL CORRESPONDENCE

### CONCERNING EDUCATION—THE SUBMERGED TENTH.

Philadelphia, Jan. 16.—An educational tremor, a quiver of intellectual excitement, ran through the staid Quaker city on the 13th, and the next morning the papers rejoiced in another periodic awakening to civic duty. The Academy of Music was filled with three thousand people who listened for two hours to a series of strong, direct appeals for the establishment of a better school system.

The remarks were timely and to the point. In the first place it appeared that nearly a thousand children were waiting patiently on the doorstep of the Philadelphia school system for a chance to get into schools; that more than three thousand children were attending school in rented buildings and nearly fifteen thousand children were on part time—getting half an education; that for 14 children who were in the elementary schools, there was one in the high schools; and that the school buildings were unsatisfactory and the school teachers overloaded with students. Particular attention was drawn to a slaughter house, alias stable, alias school house, recently secured for educational purposes.

In the second place it appears that these conditions were not typically American, but were distinctively Philadelphian. Of ten leading cities in the United States, Philadelphia stood tenth in the proportion of children in the upper grades; ninth in the value of school property per pupil; and well down the list in items of school expenditure, and number of pupils per teacher. Not only were the Philadelphia schools defective, but they came very near being most defective. Philadelphia formed the educational submerged tenth.

And the remedy? More money for the schools—four million dollars now, and more soon to follow! A decent seat, in a decent school, for every child! God speed, City of Brotherly Love; the journey is long but the purpose is noble. It cannot but lead to ultimate success.

SCOTT NEARING.

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It is the action of an uninstructed person to reproach others for his own misfortunes; of one entering upon instruction, to reproach himself; and of one perfectly instructed, to reproach neither others nor himself.—Epictetus.

## INCIDENTAL SUGGESTIONS

### THE FIRST REFORM.

Berkeley, Cal., Dec. 31.—When President Cleveland issued his tariff reform message, Henry George, in common with many others, hailed it, not without reason, as the herald of a great movement which of its own momentum would quickly develop and lead to greater things, and thought that from tariff reform an advance would be made to free trade and that eventually the culmination would be found in the taxation of land values. Before his death, however, he witnessed the tariff reform agitation adroitly diverted, lose its force by diffusion, and practically cease to exist as an issue.

So it must and will ever be, as long as the people leave the governing power to their so-called representatives. By war or other opportune incidents of the times, a reform movement can be too easily diverted and stifled before it has accomplished any practical results. It is and will be very difficult to accomplish much in the way of economic reform until a greater measure of political freedom is achieved. The mere vote for representatives does not constitute political liberty; it is but a step towards it. Not until the people can control both legislation and their servants the legislators, will political freedom be established. As long as desired legislation can be blocked by an individual or a number of representatives, as by the Speaker of the House, or by the Senate in the United States, or by the House of Lords in Great Britain, reformers will be beating their heads against a stone wall instead of uniting to remove the wall. Even President Roosevelt appealed to and urged Congress in vain for child labor legislation and direct election of Senators. He was coolly ignored and snubbed by his own party in Congress.

What is the lesson to reformers? Surely this:—"The people must rule," by direct legislation, and not relegate their power to any party or so-called representatives. Even were representatives anxious to ascertain and carry out the will of their constituents, the present system would be quite inadequate and clumsy. Where there are several issues the voter has often to choose the most important issue, and vote for the candidate or party that represents his views on that one issue, regardless of the attitude on other issues. In 1900 a voter opposed to both the occupation of the Philippines and to free silver, had to sacrifice his views on one issue and vote for the Presidential candidate or party representing his views on the other issue, instead of being able to record his vote on both issues separately, as he would under direct legislation.

The quickest and surest way to economic reform is to first secure political freedom. Let all reformers unite to establish a "government of, by and for the people" by means of direct legislation. When that is once established, as it can be very quickly if reformers would unite, it will be comparatively easy to secure other reforms. For one vote for any other reform, ten can be secured for direct legislation. The one reform on which all reformers are likely to coalesce is direct legislation, as it is the