

CHAPTER 5 — THE RELATION OF SPACE IN PRODUCTION

The laws of our physical being, to which I have already called attention, confine us within narrow limits to that part of the superficies of our sphere where the ocean of air enveloping it meets the solid surface. Physically we are air-breathing, or light-requiring land animals, who for our existence and all our production require place on the dry surface of our globe. And the fundamental perception of the concept of land is that of extension; that of affording standing-place or room.

But a fundamental perception is not always a first perception. Weight is a fundamental perception of air. But we realize this only by the exertion of reason, and long generations of men have lived, feeling the weight of air on every part of their bodies during every second of their lives, without ever realizing that air has weight. Perception is by contrast. What we always perceive neither attracts attention nor excites memory until brought into contrast with non-perception.

Even in the now short Atlantic trip the passenger becomes so accustomed to the constant throb of the engines as not to notice it, but is aroused by the silence when it stops. The visitor in a nail-mill is so deafened that speech seems impossible; but the men working there are said to talk to each other without difficulty and to find conversation hard when they get again into the comparative silence of the street.

Thus, while the fundamental quality of land is that of furnishing to men a place on which they may stand or move, this is not the quality first noticed. As settlers in a wooded country, where every foot of land must be cleared for use, come to regard trees as a nuisance to be got rid of, rather than as the source of value that in the progress of civilization they afterwards become, so in that rude stage of social development which we are accustomed to think of as

the primary condition of mankind, where the mode of expending labor in production which most attracts attention is that we have called "adapting," land would be esteemed rich or poor according to its capacity of yielding to labor expended in this first mode, the fruits of the chase.

In the next higher stage of social development, in which that second mode of production, which we have called "growing," begins to assume most importance in social life, that quality of land which generally and strongly attracts attention is that which makes it useful in agriculture, and land would be esteemed rich or poor according to its capacity for yielding to labor expended in the breeding of animals and raising of crops.

But in a still higher stage of social development, attention begins to be largely given to the third mode of production, which we have called "exchanging," and land comes to be considered rich or poor according to its capacity of yielding to labor expended in trading. This is already the case in our great cities, where an enormous value attaches to land, not because of its capacity to provide wild animals to the hunter, nor yet because of its capacity to yield rich crops to the farmer, but because of its proximity to centers of exchange.

That the development of our modern economy began in what was still mainly the second stage of social development, when the use of land was usually regarded from the agricultural point of view, is, it seems to me, the explanation of an otherwise curious way of thinking about land that has pervaded economic literature since the time of the Physiocrats, and that still continues to pervade the scholastic political economy — a way of thinking that leads economic writers to treat land as though it were merely a place or substance on which vegetables and grain may be grown and cattle bred.

The followers of Quesnay saw that there is in the aggregate

production of wealth in civilization an unearned increment — an element which cannot be attributed to the earnings of labor or capital — and they gave to this increment of wealth, unearned so far as individuals are concerned, the name of net or surplus product. They rightly traced this unearned or surplus product to land, seeing that it constituted to the owners of land an income or return which remained to them after all expenditure of labor and investment of capital in production had been paid for. But they fell into error in assuming that what was indeed in their time and place the most striking and prominent use of land in production, that of agriculture, was its only use. And finding in agriculture the use of a power of nature essentially different from the power that is utilized in that first mode of production I have named “adapting,” they jumped to the conclusion that the unearned increment of wealth sprang from the utilization of this principle. Hence they deemed agriculture the only productive occupation, and insisted that manufacture and commerce added nothing to the sum of wealth above what they took from it, and that the farmer was the only real producer.

This weakness in the thinking of the Physiocrats finally discredited their true and noble teachings, unpalatable as they necessarily were to the powerful interests who seemingly profit by social injustice. But the economists who succeeded Adam Smith, while they avoided the error into which the Physiocrats had fallen, avoided as well the great truth of which this had been an erroneous apprehension. Greedily accepting the excuse which the Malthusian theory offered for putting upon the laws of God responsibility for the misery and vice that flow from poverty, they fell into the habit of regarding land solely from the agricultural point of view, thus converting what is really the spatial law of all production into an alleged law of diminishing production in agriculture. Even Ricardo, who truly though very narrowly explained the law of rent, shows in all his

arguments and illustrations an inability to free himself from thinking of land as relating only to agriculture, and of rent only as agricultural rent. And although in England the relative importance of agriculture has during all this century steadily and rapidly declined, the habit of thinking of land as a place or substance for agricultural operations is still kept up. Not merely is the law of diminishing production in agriculture still taught as a special law of nature in the latest works treated as authoritative in colleges and universities, but in speaking of land and of rent most English writers will be found to have really in mind agricultural land or agricultural rent.

What is true of England is true of the United States except so far as the influence of the single tax has been felt. But the greatest difficulty which the single tax propoganda meets in the United States is the widespread idea, sedulously fostered by those who should know better, that nonagricultural workers have no interest in the land question and that concentrating taxes on land values means increasing the taxes of farmers. To fostering this fallacy all the efforts of the credited organs of education are directed.

The relation of space to all production may be readily seen. The concentration of labor in space tends up to a certain point to increase the productiveness of labor; but increase of production with increased application of labor to any given area cannot go on indefinitely. A point is reached at which the further application of labor in the given area, though it may for a time result in greater aggregate production, yields a less proportionate production, and finally a point is reached where the further application of labor ceases even to increase the aggregate result.

This law is not peculiar to agriculture nor to the second mode of production which I have called "growing." The exertion of human labor in the production of wealth requires a space; not merely

standing or resting space, but moving space — space for the movements of the human body and its organs, space for the storage and changing in place of materials and tools and products. This is as true of the tailor, the carpenter, the machinist, the merchant or the clerk, as of the farmer or stock-grower, or of the fisherman or miner. One occupation may require more elbowroom or tool-room or storage-room than another, but they all alike require space, and so must come to a point where any gain from concentrating labor in space ceases, and further concentration results in a proportionate lessening of product, and finally in an absolute decline. The same law, first of increasing, then of diminishing returns, from the concentration of labor in space, which the exponents of the doctrine of diminishing returns in agriculture say is peculiar to that occupation, is nothing more or less than the spatial law of material existence.

We have only to think of it to see that what is called the law of diminishing returns in agriculture applies to the making of bricks as fully as to the growing of beets. A single man engaged in making a thousand bricks would greatly waste labor if he were to diffuse his exertions over a square mile, digging and burning the clay for one brick here and for another some distance apart. His exertion would yield a much larger return if more closely concentrated in space. But there is a point in this concentration in space where the increase of exertion will begin to diminish its proportionate yield. In the same superficial area required for the production of one brick, two bricks may be produced to advantage. But this concentration of labor in space cannot be continued indefinitely without diminishing the return and finally bringing production to a stop. To get the clay for a thousand bricks without use of more surface of the Earth than is required to get the clay for one brick would involve, even if it were possible at all, an enormous loss in the productiveness of the labor.

And so if an attempt were made to put a thousand men to work in making bricks on an area in which two men might work with advantage, the result would be not merely that the exertion of the thousand men could not produce five hundred times as much as the exertion of two men, but that it would produce nothing at all. Men so crowded would prevent each other from working.

Or let us take that part of the production of bricks that of all parts requires least space — that which consists merely in the storage of bricks after they are made. Though two bricks may be rested on top of one another without any more use of superficial area than is required for the resting of one brick, this is not true of a thousand bricks, nor even of a hundred. Much less than one hundred bricks so placed would become so unstable as to fall with the slightest jar or breeze. Before ten bricks had been rested one on top of another it would become evident that any further extension of the perpendicular would require an extension of the base. And even with such extension of base as would permit of perpendicular stability, a point would finally be reached where, even if the surface continued solid, the weight of the upper bricks would crush the lower bricks to powder. Thus it is no more possible indefinitely to store bricks on a given area than on a given area indefinitely to grow beets.

Up to a point, moreover, which is about waist-high for an ordinary man, it requires less exertion to place or take from place the last brick than the first brick, or in other words, labor at this point is more productive. But once this point of greatest productiveness is reached, the productiveness of labor begins to decline with the further application of labor on the same area, until the point of no return or non-productiveness is reached. The region of this point of no return to the further application of labor in the storing of bricks on a given area may be delayed by such labor-saving devices as the wheelbarrow and steam engine, but it cannot be prevented. There is

a point in the application of labor to the storage of bricks on any given area, whether a square foot or square mile, where the application of successive "doses of labor" must cease to yield proportionate returns, and finally where they must cease to yield any return.

Thus the law of diminishing returns, which has been held as peculiar to agriculture, is as fully shown in the mere storage of bricks as it is in the growing of crops or the breeding of animals. The point of greatest efficiency or maximum productiveness in the application of labor to land exists in all modes and all forms of production. It results in fact from nothing more nor less than the universal law or condition that all material existence, and consequently all production of wealth, requires space.