CHAPTER IV.

CAPITAL.

1. We have already seen that capital is essential to any considerable production. We have also seen that capital is the result of previous labor reserved to aid in future production. We have further learned that capital implies saving. But mere saving is not the sole condition of capital; indeed, a narrow penuriousness prevents the rapid accumulation of capital. The man who is accustomed to bring his water from a spring a quarter of a mile from his house, instead of digging a well at the cost of a few dollars or a few days' work, acts uneconomically. In the long-run, the bringing of the water from the spring costs him much more than the digging of the well. The man who has extensive grain-fields, and who, for the sake of saving the expense of a reaper or even a cradle, continues to use the sickle, will find that his saving results in a loss instead of a gain.

2. A man does not need to be rich in order to be a capitalist. When the savage has invented a bow and arrows, he has the rudiments of capital. The laborer who has reserved out of his earnings enough to buy him a set of tools, or a few acres of land, is as really a capitalist as the owner of factories and railroads. It is only as foresight discerns the valuable consequences of self-denial, that there arises a sufficient inducement to reserve from present consumption for

future use. "The hardest lesson for children and savages to learn is that of economy, — the necessity of bridling the inclination or appetite of the moment, with a view to some prospective benefit. Long and hard experience has taught this lesson to the full-grown and reflecting man, and taught it so effectually, that, as is often the case, the acquired inclination overrides the original impulses; and all other passions are merged not merely in the love of accumulation, but in that of saving." [1]

3. Capital is not synonymous with wealth. It is only that portion of wealth which is employed in producing wealth. We need a little caution here, however, lest we be misled. There is a large amount of property which is not apparently or instantly productive, but which is unquestionably to be reckoned as capital. It furnishes certain conditions of production, inasmuch as, if it did not exist in its relation to the given enterprise, the latter could not go on. A farmer must have a considerable stock of provisions which he reserves from one harvest for his subsistence till another. These may lie a great part of the year inactive and apparently useless in his storehouses. But they are nevertheless a part of his capital, and without them his business must fail. The same is true of the fund which the manufacturer reserves with which to pay his workmen. It is the means of their subsistence between the time of their beginning work and the time when the completed product put in the market brings in its returns.

4. The difference between wealth and capital may be further illustrated. A man has a hundred thousand dollars. He decides to invest in a manufacturing enterprise. He expends a portion of it in buildings and their appurtenances adapted to his object. He reserves a sufficient amount for

[1] Professor Bowen.

the sustenance of laborers, which will be in the form of money to be paid out as wages; also a certain amount to be used in the purchase of raw material. He must also make provision for food, clothing, and shelter, to keep himself in a condition to do his own work till the time of returns from the products of the business. All this might properly be reckoned as capital. But the amount embraced in the last item must be strictly limited to the purposes designated; namely, to enable the proprietor to do the work essential to his business: otherwise it is not capital. If he does none of the work, but leaves the management to others, then the amount expended in food, clothing, and shelter is not capital at all. Or, if he be engaged in the business, all that he expends beyond what is essential to the purposes specified is so much outside of his capital. Thus he may put twenty thousand dollars into a house, grounds, gardens, conservatories, costly furniture, and works of art; but most of this is so much subtracted from his capital. It may be all properly and wisely used, but it is not used as a condition of further production.

5. Capital is divided into *fixed* and *circulating*. There are two distinct ways in which capital is applied to production. The main difference consists in this, that certain kinds of capital are used only once in the fulfilment of their purposes; certain other kinds are used repeatedly. There are also some minor differences.

Circulating capital is of two kinds. 1. There are the stock and commodities of any character to be consumed in reproduction. These embrace (*a*) the material out of which the new product is to come, — as lumber for cabinet-ware, leather for shoes, and cloth for garments; (*b*) food and other provisions for the sustenance of laborers. 2. There is the stock of completed commodities on hand and

ready for the market. The chairs that are finished and ready for sale in the factory are of this character. It is to be observed, that the same article may be at one time circulating, and at another time fixed, capital. Thus the chairs just spoken of, while they are in the hands of the maker, or passing through the hands of the wholesale or retail dealer, are circulating capital. It is only when they become *fixed in use* that their character changes.

Fixed capital consists: 1. Of all tools, machinery, and implements used in any industry; under this head, too, are comprised all beasts of burden or draught, and all structures of every sort for manufacturing and productive purposes. 2. All improvements of land, such as clearing, draining, fencing, etc. 3. Mental acquisitions gained by labor, and which give man power for productive results.

6. It must be borne in mind, that there can be no production without consumption. All capital is consumed. This is readily seen in the case of circulating capital, but not so readily in that of fixed. Yet evidently tools, buildings, bridges, locomotives, and all other structures and instruments wear out. The only difference is, that in one case the consumption takes place at once; in the other, it is gradual. Some kinds of fixed capital are consumed more rapidly than others. The farmer's scythes, hoes, and hand-rakes rarely last more than a year or two. His carts, wagons, reapers, etc., last much longer. The steel pen with which I write these lines has been in use two days, and has now nearly exhausted its capability of service. The inkstand before me has served for nearly a dozen years. Some bridges and other structures have been in existence for centuries. The old Roman aqueducts are still seen stretching away for miles over the Campagna. Most of them, it is true, are in ruins; but the many yet remain-

ing massive arches upholding the water-courses show how enduring are some of the products of human industry.

7. It is an interesting fact, and worthy of notice here, that nearly all the wealth now in existence has been created within a comparatively recent period, and most of it within a few years. We talk of property inherited from ancestors, as if it had been received from them in its present form. Many persons have the impression that no portion of the wealth of the community has been produced within the past year, except so much as may have been added to that previously existing. This is a great mistake. Says Mr. Mill, "The greater part in value of the wealth now existing in England has been produced within the last twelve months." This is stating the case pretty strongly, but it is not so far out of the way as one who has not investigated the subject might suppose. It is nearly certain that only a small proportion of the wealth now existing in England or in this country had any existence ten years ago. Capital is perpetuated, not by preservation in its present forms, but by continued reproduction.[1]

8. It will readily be seen that all fixed capital must have previously existed in the form of circulating capital, and that the former only results from the conversion of the latter. Thus, in the primitive condition of society, when the savage has secured a certain amount of food, he may consume that food at once, or he may reserve a certain portion of it till he has an accumulated store, on which he may then live while he takes time to construct an improved club, or a bow and arrows. In the latter case he has converted his

[1] The whole value of the industrial product of the United States for 1870 was estimated at $7,286,629,328. The whole value of all the property of the country was reputed by the same authority as a little more than $30,000,000,000. Thus the annual product was nearly one-fourth as much as the entire wealth.

means of sustenance, which was circulating capital, into fixed capital. By this means he has acquired additional power over nature, and can accumulate more rapidly than before. As he can now more easily supply his wants, he will, if the spirit of sacrifice be sufficiently strong, be able to contrive and invent other instruments which will always be the means of additional advantage in his contest with nature. It is this constant conversion of circulating into fixed capital, that marks the progress of man from barbarism to civilization, and the gradual predominance of mind over matter.

9. So far we see, in the case of a single individual and in the rudimentary condition of society, only good resulting from this change from the temporary into the permanent forms of wealth. This would seem to indicate a general law, that, in proportion as the tendency of property to take on permanent forms increases, the tendency to the growth of wealth increases; or, that capital increases with the tendency to the conversion of circulating into fixed capital.

Yet the opinion widely prevails among the uneducated or partially educated portion of the community, and even to some extent among the better informed, that, as machinery is invented, more and more laborers will be thrown out of employment, and thus deprived of their means of support. There are many circumstances about the introduction of machinery, which, to a superficial observer, indicate such a consequence. Thus, on a certain large farm, twenty men have been necessary to do the harvesting. Now the proprietor purchases a reaper. With two horses and two or three men, as much can be accomplished as before with the whole twenty. Consequently seventeen or eighteen men are deprived of employment. In some instances of sudden and rapid invention and change, this would undoubtedly be the case. But these changes

usually come on gradually. There is always a demand for a part of the displaced labor, in the construction of the machines. By reason of the increased facilities, there will be a larger production at the same cost. This will diminish the price, and greatly enlarge the demand, to satisfy which more laborers will be needed. There will also be a more rapid increase of capital, thus furnishing still additional opportunities for labor. The ultimate and not very remote result is, that more laborers are required than before the displacement, and that, too, at better wages; while, by means of the ever-increasing facilities, the cost of the means of living is diminished.

The inventions of Arkwright and Hargreaves, when they were first adopted, so alarmed and exasperated the poor spinners of the neighborhood, who looked upon them as portending starvation to themselves and their families, that they resorted to violence, and tore down the machinery, and drove away the inventors. Yet, I suppose, within the life-time of these very workmen, and through the influence of these very machines, the demand for labor in the cotton-manufacture was more than doubled; while, for a great part of the time since, probably fifty times as many hands have been employed as previously. The increase of labor-saving machinery within the present century has been almost incalculable; yet wages have been almost constantly increasing, while such commodities as are desired by the laborers are constantly diminishing in value.

But while in general the conversion of circulating into fixed capital is not detrimental, but on the contrary advantageous to the laborer, there are exceptions. This conversion may take place at times and under conditions which render it an evil instead of a benefit. Instances of this are seen in the building of railroads through regions where there

is no demand for them, or the multiplying of houses in a village or city where the increase of population does not warrant it. But these are mistakes which, while they do much mischief temporarily, yet quickly correct themselves from the very nature of the case.

CHAPTER V.

RELATIONS OF CAPITAL AND LABOR.

1. THE relation of capital and labor is, in general, that of mutual dependence. Capital can produce nothing without labor. Labor works at an immense disadvantage without capital. Doubtless the precedence must be given to labor, since it must have created the first capital, and is therefore competent to effect some rude production without capital. But each is essential to any considerable effectiveness of the other, and there is no real antagonism between them. The conflict of capitalists and laborers, so often manifested, arises out of the selfishness and ignorance of the human agents, and not out of the nature of things.

2. Labor is limited by capital. This is a fundamental proposition, but subject to various modifications. We have seen that capital of itself produces nothing. It only furnishes the conditions of successful labor. The capital upon which labor depends consists substantially of (*a*) the material to be wrought into other forms, (*b*) real estate, (*c*) machinery and implements, and (*d*) the sustenance of the workmen.

The proposition that labor is limited by capital is sometimes interpreted to mean, that, in any community with a given amount of capital, any increase of laborers must diminish the rate of wages, and that any increase of the rate must

diminish the number of laborers employed. This interpretation presumes that all the capital of the community is employed in the most profitable manner, and that the labor applied to it is disposed according to the best methods. But these are conditions seldom likely to co-exist, even if they exist separately.

Still it remains true in general, that, when there is a small amount of capital, only a small amount of labor can be advantageously employed. On the other hand, the more capital there is, other things being equal, the greater will be the demand for labor, and the greater its remuneration.

3. Does the unproductive expenditure of the rich tend to the benefit of the poor by creating a demand for labor? This question has been much discussed, and even yet it is not with all minds clearly settled. Doubtless it does not admit of a categorical answer. The opinion that a profuse and extravagant consumption of wealth is beneficial to the community at large, can hardly be held without qualification by any person. Let us carefully consider the subject in several of its bearings.

Here is a man whose income is $20,000 a year. We will suppose that he consumes all this unproductively. He employs a large retinue of servants, he buys costly delicacies for his table, procures splendid furniture and expensive garments, and gives magnificent entertainments. All this expenditure may be for services rendered, — for the work of servants, the products of artisans and artists. It makes a demand for a large amount and a great variety of labor. But nearly all the product of all this labor is consumed within the year: nothing is reserved. It is true, if this is a permanent income, and this is our hypothesis, the same number of laborers, but no more, can be employed for the next and the subsequent years.

Now, suppose, that, instead of expending the whole $20,000, the proprietor had lived on $5,000. There would then have been $15,000 to add to the permanent capital of the community. This invested in business would have given employment to as many laborers as though it had been used in the other way. At the end of one year it may have little perceptible effect on the demand for labor; but, during the second year, this $15,000 reserved from the first year's income will be still in existence. There will be also the profit accruing from the investment. Instead of being wholly destroyed, as in the other case, it will now furnish opportunity for at least a few more laborers. If the proprietor continues to live on $5,000, and to employ the remainder of his income productively, there will be more than $30,000 to co-operate with labor, instead of the $20,000, as in the first instance. The next year this additional business-capital will exceed $45,000, and will soon go up to $60,000 and $100,000. Not only will there be a constantly increasing amount of capital, but, by the increase of production, commodities will be cheapened; and thus there will be a tendency both to an increase of wages and an enlargement of their purchasing power. Economy and not prodigality, on the part of the rich, is an advantage to the laborer.

CHAPTER VI.

SOME CONDITIONS OF HIGHEST PRODUCTION.

1. It is only by the application of principles underlying political economy, that we come to the conditions of the highest production, or, in other words, find how to satisfy the largest range of desires, to the greatest extent, at the smallest cost of labor.

One great essential to this end is *the combination and division of labor*. It may seem strange that two apparently contradictory terms should represent entirely harmonious conceptions. But we shall see this to be actually the case.

We need at this point to recall what has already been said on the subject of *Association* and *Individuality*. We are made to be mutually dependent. From the cradle to the grave, most of our wants are supplied by others than ourselves. A full complement of human qualities is found only in the aggregate of humanity. Every one lacks something that some other can supply.

But in order to association, as we have seen, there must be difference. Two persons just alike would have no need of each other. Mutual dependence is in the inverse ratio of similarity. If one man be blind but otherwise physically sound, and another have good eyes but no legs, the blind man can carry the legless one on his shoulders; while the latter directs the former's course, and warns him of any

danger or obstacle in the way. Two legless men would be of little use to each other, and "if the blind lead the blind, both shall fall into the ditch."

Association and *individuality* are the two characterizing forces of an advancing civilization. They are analogous to the centripetal and centrifugal forces in the physical world. Men combine to produce a certain result, because each can contribute something which another cannot so well or so readily. Hence combination is not only consistent with division of labor, but it is largely dependent upon it.

2. Combination or co-operation is of two kinds, — simple and complex. The former is illustrated in those instances in which several persons unite for the accomplishment of a result which could not be effected by separate workers except in much more than the proportionate time. There are also operations which can be performed by the combination of a number of persons, which one man could not effect in *any* length of time: such are the moving and placing of heavy timbers and stones, the management of ships and railway-trains, and many other such things.

Complex combination is where several persons help each other by following different employments. Each man needs nearly the same that every other man needs. But, while each provides for only one kind of want, he provides more than enough to satisfy his own desires in that particular respect, and contributes the overplus to meet that same want in others. As all others do the same, each is contributing to meet the desires of one, and all to each. The shoemaker, the tailor, the carpenter, the cabinet-maker, the blacksmith, the paper-maker, the tinman, the miner, the painter, etc., are all contributing to supply the farmer's needs; and the farmer is as indispensable to the needs of all of them. The remarkable thing about it is, that most

of these persons are working without any previous concert or mutual understanding, and are thus unconsciously co-operating for each other's advantage. The wants of each are many times more fully met in this way, than if each should undertake to supply all his own wants; since each can work to the best advantage if he confine himself to the few kinds of work for which he has taste and aptitude.

It is just here that we see the immense civilizing influence of this separation and co-operation in labor. Were every man compelled to produce for himself whatever he needs, it is evident that his provision for his needs would be meagre, and hardly obtained. The obstacles to acquisition would be so numerous, that, were he to put forth the most strenuous efforts, only a small part of what he might desire could be secured. No one would have any inducement to obtain much beyond the bare necessaries of life. There would be the scantiest accumulations, no capital worthy the name, and consequently no public works, scarcely any commerce, little culture, no art, science, or literature, — in a word, no civilization.

3. We have, so far, chiefly considered the separation of labor into different industries, each of which ministers to great numbers of the followers of other occupations. But, as civilization advances, the separation is carried further. In complicated trades the work is divided into a number of processes. The increase of the productive power of labor by this means is almost marvellous. The example of pin-making has been used as an illustration of this ever since Adam Smith. Formerly there were in this occupation eighteen distinct parts. An instance is given where only ten persons were employed, some of them performing two or three operations. With ordinary exertions they could make twelve pounds of pins in a day, or about forty-eight thousand pins

of average size. Each person, then, on an average, might be regarded as making forty-eight hundred in a day. But we are assured by those competent to judge, that if all had wrought separately, and none been educated to a particular process, they probably could not have made twenty pins apiece. This gives an increase, through combination and division, of *two hundred and forty fold.* Mr. Say gives an illustration from the manufacture of playing-cards, where the increase was two hundred and fifty-eight fold by the same method. This seems almost incredible, and yet there are so many other illustrations that there can be no doubt on the subject.

4. Among the benefits of the division of labor are the following: 1. The increase of dexterity in the workman. Persons of the commonest ability gain astonishing facility in a little time by concentrating upon one kind of action. A child fastening on the heads of pins, it is said, will repeat an operation requiring several distinct motions of the muscles, one hundred times a minute for several successive hours. Adam Smith states, that, if a blacksmith had to make nails without having been accustomed to the work, he would not make more than two or three hundred bad nails in a day. But boys who are brought up to that special work can turn out twenty-three hundred good nails in a day.

2. There is a saving of time and material. (*a*) In passing from one kind of work to another, much time is ordinarily lost. Neither the mind nor the muscles are ready for the new labor, and there is always more or less sauntering before getting adjusted to the changed conditions. It is true, however, that there is something of an offset in the fact, that, in such a change, a rest is afforded to one set of muscles while another set is called into action. (*b*) Time is saved, again, in learning the business. To master a complicated trade might require, say, five years; but if the various processes be grouped in five divisions, and each of five men learn one of these in a year, and each devote himself to that which he learns, then twenty years of time will be saved in learning that trade by these five men. (*c*) There is also saving of material. In learning a trade, much material is commonly spoiled. If the diversity of operation be great, the waste will be proportionally great. This would be greater where each learns a whole trade than where only a single process is learned.

3. Another advantage is, that inventions to abbreviate or save labor in a particular department are more likely to occur to one whose attention is exclusively directed to that work.

4. A fourth advantage is so conspicuous and obvious that it is remarkable, that, instead of being the first noticed, it was not observed till among the last. It is that of classifying the laborers according to their capability. Different parts of a trade often require unequal degrees of skill and physical strength. By allowing those who have the least of these, to do the simpler and lighter parts of the work, the more complex, nicer, and heavier can be given to those more competent. The latter would not only do more work than if they ranged through the whole business, but they will do a portion which the former could not do at all, and would thus be unavailable as laborers. This exclusion of a large proportion of laborers would make the work much more costly. Take again the illustration of pin-making. Mr. Babbage has shown that some portions of this work require very considerable skill. Other portions can be performed by persons of ordinary ability, and in them young boys and girls often accomplish as much as experienced and skilled workmen. An instance is given where the wages ranged from six shillings a day down to four and one-half pence.

Now, if *all* these operations were to be performed by each laborer, only the six-shilling workmen could be employed, as they alone could do certain parts of the work. All the others would be shut out, the best workmen would get lower wages, and the cost of the product would be enhanced from five to ten fold.

5. There is also the advantage which comes from the multiplication of services. The express-companies, devoting themselves to the carrying of parcels and packages of goods, can carry a hundred or a thousand of these with many times less labor than all who have goods to send would have to expend did each carry his own.

6. The multiplication of copies, as is done by a printing-press, or in founderies, or by means of dies, is another example. To copy out by hand a thousand copies of the Bible or of Shakspeare, would cost five hundred or a thousand times as much as to have them printed where several copies are struck off from the same type.

5. But there are certain limitations to the divisions of labor. 1. One of these is the nature of the employment. Some occupations admit of only a certain number of divisions. In watch-making, it is said, there are more than a hundred distinct branches: in some other trades, only three or four are possible. Others still, while capable of manifold division, are such that the different kinds of work must be done at different seasons of the year, so that, if one made a speciality of any of these, he would needs be idle a good part of the time: of this kind is agriculture.

2. A second limitation is found in the demand for the product. A blacksmith setting up his forge in a sparsely settled neighborhood, the patronage of which will furnish occupation for only one man, must do all the different parts of the work himself. If the community increases, he may

employ an apprentice; and continued growth may furnish occasion for a journeyman, and perhaps more than one, and the divisions take place accordingly.

3. Another limitation is in the amount of capital employed in the business. Where there is but little capital, the proprietor can employ but few workmen. He can purchase but a small stock of material, and his supply of tools and apparatus must necessarily be small. He can in such case set only a limited number of men to work, even if he could advance the amount necessary for their wages. Consequently, there can be but a small division of labor.

6. There are some disadvantages as well as advantages in the division of labor. 1. Such subdivisions of employment have a tendency to impair physical health. They afford too little variety of muscular exertion. While this is not universally the case, it is too often so. There is the constant pressure upon certain portions of the body, and none upon others. There is a want of balance. There are also certain processes which require an unnatural position, which, if long continued, is likely to induce deformity and perhaps disease. This liability, though perhaps less than it is sometimes made to seem, is still actual, and demands consideration.

2. It diminishes the self-reliance of laborers. It is apt to generate a feeling of dependence, since the worker may acquire the habit of expecting others to do almost every thing for him. One comes to regard one's self as only an element in a great system, — a small portion of a machine, which, as a whole, produces certain results. There are, doubtless, exceptional instances, in which separation of employment develops individuality; but it oftener has the opposite effect.

Closely connected with this is the consequence that the number of those who do business on their own account is

diminished. It is not well that the proprietors in a community should be few. Ownership, responsibility, the conciousness of being one's own master, foster manliness, and tend to the development of character. It is true, if all men were proprietors, the interests of industry might suffer; but if only a *very few* were such, it would suffer still more. We should seek as far as possible to avoid the evils incident to either extreme.

3. A third disadvantage, though closely connected with the second, is more serious than either of the others. In the minute subdivisions which characterize our modern industry, there is a hinderance to mental growth, — a contracting and belittling influence hard to resist. When a workman works all day, and day after day, boring holes or turning spindles, or cutting the same patterns with a jig-saw, it requires much effort both in and out of work-hours to keep the mind from a deterioration of which it is sad to think. I can scarcely conceive how any man of even moderate intelligence can be content to confine himself for any considerable time to such sterile operations. It is true, that, under the conditions which such division of labor implies, there are found certain compensations. First, by this means, men are brought into communication with one another more than they would otherwise be. Information is thus gained, inquiries suggested, and thought excited. All this is every way wholesome. Secondly, the very fact that many of these minute operations can be performed with but little draught on the mind, and some of them almost automatically, implies mental leisure in which thought can go on simultaneously with work. If the vacant hours be only moderately improved, culture and development need not be wholly wanting.

CHAPTER VII.

CONDITIONS OF HIGHEST PRODUCTION (*continued*).

1. CLOSELY connected with the subject of combination and division of labor, is that of the *diversification of industry*. Upon this depends to no small extent the measure of the productiveness of a community. There is a somewhat prevalent doctrine which is antagonistic to this. It is, that the principle of the division of labor should apply to separate communities, as well as to the different individuals of the same community. This doctrine is more frequently implied than explicitly stated.

It is obvious enough, that each community should devote itself to such industries as it can on the whole pursue to the best advantage; that it should not cherish those which it cannot thus pursue. In other words, no industry should be supported *merely* for the sake of the industry. But neither, on the other hand, should distribution of industries to different communities be practised for the sake of this distribution. It is obvious, that, in proportion as such a distribution takes place, there must be a diminution of the diversity in each several community. If each society should confine itself to the production of two or three commodities, it must depend on other societies to furnish it with most of the articles which it may need. It has already been shown that the association, combination, and commerce, so essential to