CHAPTER III — CAPITAL

I. WHAT IS CAPITAL?

As we have already observed (p. 62), it is not easy to see at first what this third agent of production is doing here, and why it has the honour of appearing in the same rank as the other two. Is it not an intruder? For if labour and nature seem quite distinct from the wealth that they produce, it is not the same with what is called capital, this being itself only the product of labour and nature. If capital in its turn has the power of giving birth to wealth, it can only do so with the aid of its parents. Is not this a kind of economic incest, or at least a confusion of terms?

Yet it is really quite simple. For to say that capital is one of the necessary factors of production is merely to state the fact that *no wealth can be produced without the help of other pre-existing wealth.* And there we have an economic fact whose importance certainly cannot be exaggerated. Just as no fire can be lighted, at least in ordinary conditions, without a lighted match, torch, or tinder-box; just as no living being can be produced without the presence of a portion of pre-existing living matter — germ, cell, or protoplasm; so also no wealth can be produced, in normal economic conditions, without the presence of a portion of pre-existing wealth, which plays the part of a *fuse.* As a name must be given to this pre-existing wealth with such a characteristic function, we call it *capital.*

Of all the innumerable writers who have told us tales of Robinson Crusoes, and have proposed to show us man by himself at grips with the necessities of existence, there is not a single one who has not been careful to provide his hero with a few implements or provisions saved from the wreck. They knew quite well that without this precaution they would have had to end their story at the second page, for the existence of their hero could not be prolonged farther than that. Yet had not all these Crusoes their own labour and the treasures of a fertile, though virgin, nature from which to obtain a living? Yes; but something still was lacking, and as they could not do without it, the author had to manage somehow or other to procure it for them. This indispensable "something" was *capital.*

But there is no need to go in search of a Robinson Crusoe to become convinced of the utility of capital. In the midst of our civilized societies the situation is no different. There is no harder problem to solve, in the actual world we live in, than how to acquire something when we possess nothing. Take the case of a labourer, a man without means: what can he do to produce the necessaries of existence — to earn his living, as we call it? A very little reflection will show us that there is no kind of productive industry that he can undertake — not even that of a poacher, for he would need a gun or at any rate a snaring wire; nor even that of a rag-collector, for in that case he would need a basket and a hook.[1] He would be as wretched, as helpless, and as sure to die of starvation as a Robinson Crusoe who had saved nothing from the wreck, were he not enabled, by the wage-system, to enter the service of a capitalist who would provide him, on certain conditions, with the raw material and the implements necessary for production.

Animals, no doubt, have to be content with what nature and their own labour give them for the satisfaction of their wants, and primitive man was necessarily in the same case. It is evident enough that the *first* capital of the human race must have been formed without the aid of any other capital, just as — to go back to our former analogy — the first fire must have been lighted without a previous fire, and the first living cell must have sprung from the inanimate world in conditions which will certainly never be reproduced. In the same way, therefore, it must once have happened on the earth that man, more destitute than Crusoe on his island, solved the difficult problem of producing the first wealth without the aid of any pre-existing wealth. It must have been with the help of his hands alone that man put in motion the mighty wheel of human industry.

But, when this wheel was once started, the hardest step was over, and the slightest push was enough to give it a constantly increasing speed. The first stone picked up at his feet, the flint from which man's ape-like ancestors struck fire, served at the beginning as an assistant in the creation of other assistants in rather more favourable conditions, and these in their turn helped to create yet others. The power of production increases in a geometric ratio, in proportion to the quantity of wealth already acquired. But it is well known that though a geometric series increases after a certain point with

[1] Intellectual production is no exception to this rule. The professions of the lawyer, doctor, civil servant, etc., presuppose the existence and utilization of a certain amount of previous wealth, not only in the form of instruments of labour, like libraries, laboratories, medical instruments, carriages, and suitable clothes, but especially in the shape of money advanced during the years of study and preparation.

enormous rapidity, the increase at the beginning is slow. So our modern societies, living on the accumulated wealth of a thousand generations, make light of the task of multiplying wealth in all its forms; but they should not forget how slow and perilous it must have been, at the beginning, to accumulate the first wealth, and how many centuries must have passed over the earliest human societies, during the dark ages of cut flints and polished flints, before the first capital was formed. Many must assuredly have died of poverty during this terrible period. It has been given only to a small and select number of races to pass safely through it, and to rise to the rank of really capitalist societies: *ad augusta per angusta*.

But let us define more precisely the nature of the service rendered by capital. It is a twofold one. The first service is of a technical description: capital appears here as an *instrument*, in the widest sense of the word, from the flint tool to the most complicated of machines or such works as the Suez Canal and, in the future, the Channel Tunnel. It is wealth that has no direct utility — it can satisfy none of man's wants — but it serves to produce other wealth which is destined for consumption. It is an *intermediate* wealth, as Boehm-Bawerk, the Austrian economist, neatly puts it. How this instrument is employed makes up the science of technology, which is outside our province here.

The other service rendered by capital is of an economic order. Capital takes the shape of an *advance*, enabling us to *await* the outcome of a productive operation. This advance may consist of actual supplies of food, or, as is more usual in the modern world, of money, or even of credit instruments. Every productive operation takes time, and waiting is a hardship, just as effort is. Even nature takes time to ripen fruit and to mature the wine in the bottles; and it is the same with man's labour.

As a general rule, the more productive an operation is, the longer is this period of waiting. When man lives from hand to mouth, the labour of making a living — by hunting, fishing, or picking wild fruits — only occupies a few hours. But in the case of agricultural labour and industrial enterprises the interval between the first tilling of the ground and the harvest, or between the setting up of the looms and the sale of the completed fabric, may run to years. The time taken by all labour is longer than it seems, because we forget that we must add the time taken in producing the implements made on purpose for a particular piece of work. And it is just there that the delays are longest. Thirty-five years elapsed between the day when de Lesseps drove the first pick-axe into the site of the

Panama Canal and the day when the first ship passed through it.

The conception of capital is closely bound up, therefore, with that of duration of time; and this is so not only in the sphere of production but also in that of distribution, for we speak of interest as "the price of time."

The question, What is capital? seems to give rise to the further question, What is *income?* But income is sufficiently defined by the definition we have already given of capital: all that is not capital, in fact, is income — every product, that is to say, which is intended to procure for us an immediate satisfaction. The cow and its milk, the loom and the cloth, the share certificate and the coupons to be detached from it, are illustrations of capital and income respectively.

Income, therefore is a stream that flows unceasingly, like the water issuing from a spring. The flow is generally measured for the period of a year, so that we speak of an annual income; but it is really a continuous stream.

By living in society, however, we have lost the habit of regarding income as consisting of concrete, consumable objects or products in kind. It appears to us only in the shape of money, that is to say, the means of buying these objects of consumption. When we say that a person has an income of £500 a year, we mean that he has the power of buying and consuming goods annually up to the value expressed by that figure. It is the value of the income that measures the value of capital: it must be so, since capital has no other utility than that of its produce. All value that is described as capital — rent, shares, or even land — is merely the value of the net income capitalized, or multiplied by a certain figure called the rate of income — a figure that varies according to laws which we shall have to study.

Income may be turned into capital whenever it is invested, or employed in a productive operation, instead of being consumed. Fortunately, that is what happens to a large part of income in all progressive countries. Can capital, conversely, be turned into income? Not if it is instrumental capital, as in the examples mentioned above; but if it takes the form of provisions or money it can be turned into income — do we not speak of living on our capital?[1] But this consumption will not last long, for it will stop as soon as the capital is consumed.

[1] Capital can be consumed indirectly, or *realized*, as it is called, even if it takes the form of implements, factories, mines, or flocks, by selling it or mortgaging it — exchanging it for money capital, and spending the latter. But this means finding a buyer or lender willing to make the exchange, and that is why, in a time of crisis like

Finally, the notion of income extends much farther than that of capital, for land and labour also produce income. We shall have to deal with these when we come to the subject of distribution.

II. WEALTH WHICH IS CAPITAL AND WEALTH WHICH IS NOT CAPITAL

In taking an inventory of a private fortune, as in a case of inheritance, for instance, we distinguish three classes of goods:

(1) *Immovable goods*, like land and houses;

(2) *Capital*, called also transferable securities, such as stocks and shares, claims on companies or the State or individuals, etc.;

(3) *Movable goods*, used in our everyday life: furniture, clothing, books, ornaments, plate, wines, everything that figures in our fire insurance policies, and also money.

These three classes correspond, in fact, to differences marked out by the nature of things. In the first two classes are the goods that produce income, and the third includes this income itself in the concrete shape of goods intended to procure us enjoyment, called *consumption goods*.

Some kinds of goods, however, are difficult to classify: houses, for instance. In the eyes of a lawyer, a house is immovable or real property, like land; but to the economist it is only a product. It matters little that it is fixed in the earth — so are railway lines. Where, then, are we to put houses? In the second class, as capital, or in the third, along with objects of consumption? In our opinion they should go in this third class, at any rate if they are dwelling-houses, for evidently factories, farms, and shops should be classed with capital. But if the house has no other purpose than to give us lodging, to shelter us from cold and rain like a cloak or an umbrella or a bed, and even in so far as it provides us with the comfort of a home, and the moral and material enjoyments covered by that term, then it satisfies our immediate wants. A house is the box in which we keep everything that meets our daily needs. The fact that it lasts a long time signifies nothing, for it lasts no longer, and perhaps even not so long, as many of the things it contains, such as plate, bronzes, money, and even some kinds of furniture.[1]

the late war, a country can only make money out of its capital if it can find buyers or lenders abroad.

[1] I ought to state, however, that this distinction is keenly disputed. Many economists think that a house is always capital, even when it is only used as a dwelling, because it always produces an income in the shape of shelter, comfort, and services

There are many other kinds of goods besides houses whose proper classification is a matter of discussion. The lines of demarcation between the three categories are not very clearly defined.

First there is the distinction between land and capital. Land is undoubtedly not a product but the mother of all wealth, whereas capital is only a product of labour and of land itself. But when we look at land as it has been made by the labour of a thousand generations — land cleared, cultivated, manured, irrigated, and drained — land which has become garden mould, as much altered by man's hand as the potter's clay — in this condition must we not describe land as capital?

No! All we must say is that it has absorbed an enormous quantity of capital. But this capital, through being invested in the earth and digested by it, as it were, has lost the character of capital and obeys henceforth the same laws as land — the law of diminishing return, for instance. The term capital should be restricted simply to the buildings erected on the soil and the implements they contain, together with the live stock.[1]

Here is another difficulty. Between consumption goods, intended for the immediate satisfaction of our wants, and capital, serving only to produce consumption goods, the distinction seems clear enough; yet in reality it is not so. It must be observed, in fact, that many things possess compound properties, and serve a double purpose, so that they sit astride the boundary line, as it were, and can be placed in the first or second category according to which of these properties is utilized. An egg is at the same time a seed and a food. It is capital, then, if we utilize its germinative properties by hatching it, but it is an object of consumption if we utilize its edible properties by cooking it for breakfast. Coal is capital when used to drive a locomotive, and an object of consumption when used to warm one's feet. A motor-car may be indispensable to a

rendered. But, at that rate, the armchair I sit in must also be capital producing income, since it, too, renders me a service. Some economists, indeed, would go even as far as that.

[1] If nature must not be confounded with capital, the same can be said of labour, which is evidently a primary factor, distinct from its produce. Yet labour, like land, may also be improved by previous labour: that is just what education does. Several economists therefore call *acquired knowledge* capital — such knowledge, for instance, as is authenticated in the liberal professions or the public service by diplomas. But here, too, we must insist on the distinction between labour and capital. It is true that this knowledge may be a source of income, but this income will none the less be the fruit of labour. The knowledge, to be sure, can only have been acquired, and the diplomas obtained, with the help of a certain amount of money capital, but that is another question.

doctor, in which case it is capital, but it may also be used merely for joy-riding.

But here is quite another difficulty! There are no goods whatever, even those which by their very nature can serve only for personal consumption and gratification, which cannot be sold, lent, or let on hire, and thereby bring in an income or profit to their owner. Now the fact of bringing in an income has become nowadays the characteristic mark of capital. It must therefore be recognized that there is not a single kind of goods which cannot become capital if the owner, instead of using it to satisfy his own personal needs, turns it into an instrument of profit. Not only can a motor-car, a sea-side villa, or a fancy-dress costume be *let on hire*, and thereby become capital, but anything we eat or drink, any article of adornment or amusement, may become what is called "stock in trade," which is just capital.

In short, we find all consumption goods pouring in a crowd into the category of capital, by way of sale or hire, and our classification vanishes into thin air!

We must retain it, however; but we must introduce a new and essential distinction — between *productive* capital and *lucrative* capital. Productive capital is that which by its nature can serve only for the production of new wealth, and is made simply for that purpose. Of this character are all implements, machines, and engineering plant. Lucrative capital is wealth which by its nature can serve only for consumption, but which can bring in an income by being sold, lent, or let on hire by its owner, like the examples mentioned above. This kind of capital produces nothing, therefore, from the social point of view, for it makes no addition whatever to the total amount of wealth in existence, but from the individual point of view it produces a great deal, for it may yield enormous profits.

It should be noticed that what is called capital in everyday speech, in opposition to immovable property, — namely, all the *transferable securities* represented by government stock, bonds or shares, mortgage deeds, and so forth — is generally only lucrative capital, in the sense that it brings in no other income than that which is drawn from the purse of the debtor or the tax-payer.

There are some distinctions to be drawn, however. A *government stock* certificate generally represents only a consumption loan, most often for war expenses or other government needs — except in rare cases where the State has borrowed money to execute public works or create a national industry. Consequently the income it provides is not the price of a product or an economic service, but a claim upon the income of the debtor — in this particular case, upon the incomes of the tax-payers.

It is the same with *bonds* or *debentures*, such as those issued by towns, railways, loan societies, etc., which are merely notes of hand or mortgages.

But with *shares* it is not the same. These always represent a loan made to some industrial organization with a view to a productive undertaking, and the dividends they carry are paid out of the produce of this undertaking. Mining or railway shares are only documents representing concrete capital in the shape of mine-shafts, galleries, coal-buckets, rails, locomotives, and so on. Only care must be taken in drawing up an inventory of a country's wealth, not to count these things as capital twice over — once as actual, concrete capital, and once more as a share certificate which merely represents it: one is the real capital, the other only its shadow.

What are we to say about money, whether in coin or notes? Are we to regard it as capital or consumption goods? And, if we call it capital, will it be productive capital or lucrative capital? The question does not admit of any precise answer, because money is anything you like: that is precisely its characteristic — to serve for all purposes. It can procure us immediate gratification when it is in our purse; or serve for production when it is paid out to workmen in the shape of wages; or provide for our future wants when it is stored up in a cash-box in the form of savings. Moreover, if the coins are worn as a necklace, as sequins are worn by eastern women, then money becomes simply an ornament. It is the destination of money, therefore, which alone determines its classification. If, however, we look not to individuals but to society, we shall see that we must class money with productive capital, as a necessary instrument and vehicle of exchange, along with waggons, weights and measures, and so forth.

III. THE MEANING OF PRODUCTIVENESS OF CAPITAL

The part played by capital in production gives rise to unfortunate misconceptions. When we say that all capital yields an income we imagine that it yields it in the same way that a tree brings forth fruit or a hen lays eggs. We regard *income*, therefore, as a product formed exclusively by capital and issuing from it, and we are led to think that capital which does not yield any income is afflicted by some congenital disease.[1]

[1] Interest was called τόκος in Greek, meaning "the bringing forth of children," and the same word appears in the legal term for compound interest: "anatocism."

What helps to propagate this false idea is the fact that most forms of capital take the shape of stocks, bonds, or share certificates, from which, according to the time-honoured formula, we *detach the coupons* which represent the income. For six months or a year, according to the nature of the document, the coupon goes on growing; when the appointed day arrives, it is ripe; it can then be plucked, and we actually tear it off or cut it off, just as we remove a fruit from the branch.

But the resemblance goes further than that. Just as when the fruit or the seed is gathered we can sow it again and grow a fresh plant that will yield more fruit, or just as when the egg is laid we can hatch it out and make it produce a chick that will give us more eggs — so also, by investing this coupon, we can create fresh capital that will yield us new interest coupons. Thus we can see capital increasing and multiplying in accordance with the same laws as those that control the multiplication of the animal and vegetable species. But the law of compound interest, as it is called, is even more marvellous than the multiplication of herrings or microbes. For a single halfpenny, invested at compound interest on the first day of the Christian era, would have yielded by now a value equal to that of some thousands of millions of globes of solid gold as large as the earth. That is an arithmetical calculation which has become famous.

Now we must wipe out the whole of this fanciful picture which has so strongly aroused — and not without reason — the wrath of the socialists. This mysterious kind of productive and generative power attributed to capital as part of its nature, is a pure chimera. Notwithstanding the popular saying, money produces no offspring, nor capital either. Not only has a bag of coins never produced a single new coin, as Aristotle remarked long ago, but a bale of wool has never produced a single fresh tuft, nor has a plough ever brought forth little ploughs. And though it is true — as Bentham said, thinking to refute Aristotle — that a flock of ewes will produce sheep, that is assuredly not because the flock is capital, but simply because it consists of animals, and nature has endowed living beings with the power of producing individuals like themselves. Capital, in the form of raw materials, implements, or provisions, is absolutely inert until it is animated or fertilized by labour.

It is true that labour also, as we have already seen (p. 62), is sterile under existing economic conditions without the aid of capital. We might be tempted to conclude, therefore, that they are both equally fertile apart, and become creative as soon as they are combined, so that their respective shares in production are as indistinguishable as those of the sexes in the production of offspring. But they must not be put on the same footing, for capital, as we have seen (p. 62), is itself only the product of labour. To say that labour is barren without the aid of capital, simply means that *present labour* can only produce with the collaboration of *past labour*. A plough and its team of horses, in the hands of a ploughman, enables him to produce much more corn than the labour of his hands alone. And it is this extra amount of corn that constitutes the so-called income of capital. None the less, it does not come from the plough, but from *the man aided by the plough*. The plough itself, too, comes from the labour of a man present or past. Those who see nothing in a plough but capital, may be reminded of the charming notion of M. Alfred Fouillée, that the inventor of the plough labours unseen by the ploughman's side.

Yet there are many people who do nothing, and live on the produce of their capital. We say that they have independent means. How, then, is this to be explained, if capital is not productive by itself? Quite simply. If the person of independent means, — the *rentier*, as he is called — does not live on the produce of his labour, since by hypothesis he does not work at all, it is because he lives on the produce of the labour of somebody else — somebody who makes use of his capital. For he has *invested* his capital, which means that he has lent it to others who utilize it. Whenever, therefore, he receives a coupon it must be inferred that somewhere, near by or at a distance, there are men unseen, *who work with this borrowed capital, and whose labour has produced the interest, profits, or dividends received by the rentier*. The interest coupons on mining shares stand for the value of the tons of coal extracted by the labour of the miners, and those on railway shares represent the result of the labour of the engine-drivers, railwaymen, station-masters, and pointsmen who have co-operated in the transport industry. This is what is sometimes called "making one's capital work"; and Rodbertus observes that the true view of the position has been so far upset that we commonly speak of the capitalists as "giving work" to the workers and enabling them to live, whereas in reality it is the workers who give capital its income, and enable the independent capitalist to live.

It is the same even when the capital in the hands of the borrower has been dissipated or consumed unproductively. In that case the interest received by the lender is no longer the produce of the labour of the borrower, but always that of someone else who must be sought for farther off. For instance, the coupons of government stock do not generally represent wealth produced by the labour or industry of the State, for the State is in the habit of spending unproductively the greater part of the capital lent to it. They represent, instead, the produce of the labour of all the inhabitants of the country, which has been poured every year into the treasury in the shape of taxes, and passes thence into the hands of the stock-holders. So too when a young spendthrift borrows money to squander, the interest that he pays to the money-lender certainly does not represent the produce of his own labour, but perhaps that of his tenants, or, if the loan has to be repaid out of his future inheritance, the produce of his father's labour. And long after the spendthrift has squandered the borrowed capital, or after it has vanished in smoke on the battle-field, it will remain just the same, as a form of lucrative capital, that is to say, as a credit instrument in the hands of the money-lender or the government stock-holder.

It must be concluded, then, that the so-called product of capital is never anything but the product of labour, sometimes of the labour of its owner, but very often, in our societies, the product of another man's labour. It does not necessarily follow that payments made for the use of capital always involve parasitism, as socialists too hastily declare. The charge is often true, but the fact of living on another man's labour does not in itself by any means imply exploitation, for we are each of us called upon, under a social order based upon division of labour and exchange, to live on other people's labour. It is a case of mutual dependence or reciprocity. It only degenerates into exploitation if the service rendered, or the loan received, does not admit of reciprocity. We must know, therefore, whether the capital lent to the borrower by the capitalist *rentier* has procured for the former the advantage of making his labour more productive — an advantage balanced by the interest he pays — or whether this service could not have been rendered to him by other means. But this question must be left for the chapters on Interest and Profit.

IV. FIXED CAPITAL AND CIRCULATING CAPITAL

Capital is not eternal. As a rule it is not even very long-lived, because it gets destroyed by the very act of production, whether this act be instantaneous or constantly repeated.[1] But according as its

[1] John Stuart Mill explained the often-noticed but mysterious fact of the rapidity with which countries recover from the ravages of war or some great disaster, by reference to this law of the continual renewing of capital. "The growth of capital,"

life is longer or shorter, it can serve for a larger or smaller number of acts of production.

But capital acquires unlimited durability when, instead of remaining in its natural, concrete shape, it changes to the abstract form of *value*, for then it becomes constantly renewed by repayment or redemption. Such is the case, for example, with capital lent to a borrower who has to pay interest for ever, as when a loan is made to the State as a *perpetual annuity*, or when the money lent has to be returned at a fixed date, thus allowing it to be lent afresh, and so on indefinitely. Again, it may take the form of value put into industry or commerce by its owner, so as to bring in not only an income but also an increased value sufficient to replace it in case of loss. Hence arise those mythological comparisons so often applied to capital, such as the metamorphoses of Proteus, or the phœnix rising reborn from its ashes.

The name *circulating* capital is given to capital which can only be used once because it disappears in the very act of production — for instance, the corn that is sown, the manure that is dug into the soil, the coal that is burned, the cotton that is spun; and *fixed* capital is the name given to that which can be used for several acts of production, ranging from the most perishable implements, like a needle or a sack, up to the most durable, such as tunnels or canals, although these latter themselves can only remain in existence if they are maintained, or continually being remade.[1]

There is a great advantage to production in employing very durable capital. However great, in fact, may be the labour required to set it up, and however slight may be the labour expected to be saved each year by its assistance, sooner or later a time must necessarily come when the labour saved is equal to the labour expended. When

he says, "is similar to the growth of population. Every individual who is born, dies . . . . An enemy lays waste a country by fire and sword, and destroys or carries away nearly all the moveable wealth existing in it: all the inhabitants are ruined, and yet in a few years after, everything is much as it was before . . . . There is nothing at all wonderful in the matter. What the enemy have destroyed, would have been destroyed in a little time by the inhabitants themselves." (*Principles of Political Economy*, Bk. I, Chap. V, §§ 6, 7.)

The recent war will give the economists of to-day a splendid opportunity of seeing whether Mill's law is true.

[1] Some economists, however, adopt a different criterion to distinguish fixed from circulating capital: the former is that which cannot be separated from productive enterprise, and the latter is that which only yields a profit by being *exchanged*. These two classifications do not coincide at all: thus, coal burnt in an engine would be fixed capital according to this definition, whereas it is circulating capital according to the definition in the text.

that moment has arrived, the capital will be *redeemed*, which means that henceforth the labour saved will constitute a net gain to society. From that point, for as long as the capital lasts, the services it renders will be rendered for nothing. So the progress of civilization tends constantly to replace short-lived capital by that which is more durable.

The earliest groupings of population took place on the heights, as we see even to-day in the villages of the Kabylie district of Algeria. It was the women who supplied the need for water by fetching it in pitchers from the spring and climbing back to the village. I saw this myself in my childhood in the little town where I was born; and it is no light task if you multiply it by the number of water-carriers and the number of journeys they have to make. Where is the capital in this case? It is the pitcher, and it is fixed capital just the same, even though it often gets broken.

But now someone sets up a pump to raise the water from the spring to the village, or, better still, if circumstances permit, they build an aqueduct by which the water will flow of itself according to the gradient. The building of the aqueduct will represent perhaps a million or ten million times the labour employed in making and renewing the pitchers, but for a thousand years or more it will eliminate all the labour used in bringing up water. The saving will be incalculable.[1]

At the same time there are two points that must not be forgotten:

(1) The formation of fixed capital requires an immediate sacrifice in the shape of a large amount of labour or expense, whereas the remuneration that is expected to result from it, in the shape of labour abolished or expense saved, is postponed — and, as a rule, *the more lasting the capital the longer is this remuneration delayed.* If the construction of a ship canal, like the Panama Canal, for instance, is to cost a hundred million pounds, which is not to be repaid for 99 years, we must then weigh the immediate sacrifice of a hundred millions against a remuneration for which we must wait a century. Now such a balancing of alternatives requires a high degree of foresight and boldness, and a resolute faith in the future — qualities which are only to be found in combination in highly civilized communities. That is why fixed capital is rarely employed by peoples

[1] In 1913 the city of Los Angeles, in California, started building an aqueduct 258 miles long. It has taken nine years to build, and has cost £5,000,000. But it supplies some 3,500 million cubic feet of water per day. Reckoning interest and depreciation at £300,000, the price of a cubic foot of water works out at something like $\frac{1}{4000}$ of a farthing, *plus* the cost of maintenance.

whose social condition is backward, and whose political organization is lacking in stability. All the wealth of such peoples takes the form of articles of consumption or circulating capital. Consider India or Persia, for instance, where you still find all the treasures of the Arabian Nights, but no railways, roads, mines, or machines.

(2) Finally, it must be pointed out, to the disadvantage of fixed capital, that if its durability is too great it *runs the risk of becoming useless*. Consequently, great prudence is required in looking ahead, as we have just said. The material durability of capital, in fact, is not everything: what really matters is its continued utility. And though we can count on the first, up to a certain point, we can never absolutely count on the second. Utility, as we know, is unstable; and what seems the most firmly established may vanish after a certain time. We cannot imagine that the utility of water and of the aqueduct that conveys it can ever disappear; yet the great aqueduct called the Pont du Gard, built by the Romans for the town of Nîmes, is nothing now but a magnificent and useless ruin. This is because the water of the Rhône has been brought to Nîmes. When we drive a tunnel or dig a canal we have no guarantee that traffic will not take some other route after a century or two. Now if the capital sunk in the tunnel is not redeemed by the time this change takes place, a great deal of labour will have been expended uselessly. It is prudent, therefore, in view of our uncertainty about the future, not to build for eternity. From this point of view the use of too lasting a form of capital may be a dangerous operation.

This reservation holds good even of lucrative capital. Neither an individual nor a bank will ever agree to advance capital which cannot be redeemed or repaid in less than two hundred years. Why is this? Because results that can only appear after such a long time do not come within the range of human foresight. In fact, it might be laid down as a rule that any employment of capital which does not look like paying for itself in the course of three generations, should in practice be avoided.

V. HOW CAPITAL IS FORMED

Popular wisdom and the majority of economists also would say that capital is formed *by saving*. But what does this mean? For we know, and have repeated many times, that all capital is a *product*, and, like all products, can only be formed by the two primary agents of production, labour and nature. We need but glance at all imaginable kinds of capital — tools, machines, works of art, materials of every kind — to see that they can have had no other origin than this.

But what, then, is this new character appearing on the scene? Is *saving* a third primary agent of production that we have forgotten? Some economists, and notably the English economist Senior, have declared that it is. He called saving *abstinence*, so as to give it a more definite personality (and also in order to get special terms for it when the time for distribution should come). Moreover, in enumerating the three primary agents of production he, quite logically, replaced capital by its cause, and said that the three agents were nature, labour, and abstinence. And the same classification ought to be adopted by all who still hold that capital is the fruit of saving.

But this would be unreasonable. It is inconceivable how anything whatever could be *produced* by a purely negative act; whether we call it abstinence or saving, in either case it is simply an abstention. It is all very well for Montaigne to say that he "knows no action more active and brave than this inaction"; that may be true from a moral point of view, but it does not explain how this inaction can create even a pin. Production is a positive act, not a negative one.

What is meant, then, by the statement that capital is created by saving? Simply this: that if wealth were consumed as soon as it was formed, capital would never exist. It is obvious, indeed, that if the poultry farmer left no eggs in the nest to be hatched, there would never be any chickens. Nevertheless, if a child asked you where chickens come from, and you told him that the only way to get chickens was to abstain from eating eggs, he would be right in regarding this answer as a piece of good advice, to be sure, but as a foolish explanation.

Now the reasoning which makes saving the original cause of the formation of capital is analogous to that. It amounts to saying that non-destruction is one of the causes of production. Let us say simply that saving is a *condition* of the formation of capital, in the sense that if the wealth produced is consumed from day to day to satisfy our immediate needs, then evidently there will be none left available for making advances and for obtaining time for making implements, for instance. Let us say that if man, like the ant and other animals, had not the power of foreseeing his future wants, all wealth would certainly be consumed or wasted from day to day, as it is among certain savage tribes. Consequently, capital would never have been formed, and civilization itself, the child of leisure, would never have been born. Let us go still further, and say that foresight, sobriety, and other moral virtues are indispensable conditions, if not of the original formation of capital, yet at any rate of its preservation — nothing more so. But the economists who make saving the efficient cause of capital, do so, unconsciously or consciously, from the desire to justify the payment of interest on capital as the remuneration for this act of abstinence.

In short, the birth of capital always presupposes an excess of wealth produced over wealth consumed, but this excess may be obtained in two ways: production may exceed wants, or consumption may be restricted and brought below the level of wants. The term "saving," and especially the term "abstinence," do not apply at all to the first of these two cases, which is fortunately by far the more common; historically, it is in that way alone that capital has been formed.

Can we mention a single instance of wealth created by abstinence? The first flint axe belonging to quaternary man was cut by extra labour, as the result of a lucky day's hunting that brought him a larger supply of food than usual and thus gave him a day's freedom to create this first bit of capital. Is it to be supposed that, in order to pass from the hunting stage to the agricultural stage, races of people must have first saved a whole year's supply of provisions? Nothing is less probable. They simply domesticated their cattle, which became their first capital and gave them the leisure necessary for undertaking longer forms of labour, as well as giving them security for the morrow. But, as Bagehot very pertinently enquires, how does a herd of cattle represent any saving whatever? Has its possession entailed any privations on the part of the owner? Quite the reverse, for thanks to the milk and meat he has been better fed, and thanks to the wool and leather he has been better clothed.

And to-day, as in the days of the pastoral peoples, great undertakings are carried out not with past wealth but with present wealth.

But, it may be asked, even admitting that capital in the form of implements is only the product of labour, must not capital in the form of stock at least be regarded as the result of saving? No; this inference does not seem to us necessary if we admit, what we have tried to prove, that the provision of a stock results not from privation but from an excess of production — a lucky day's hunting, or a superabundant crop.

What suggested and gained credit for the idea of saving as the mother of capital, was the use of money as almost the sole form of wealth. In fact, if we go back to the origin of all money-capital we shall see a certain number of coins *set aside* — shut up in a safe or a money-box, or taken to the savings-bank. So we have got into the habit of looking at capital only in the shape of an investment, for we certainly only invest what is surplus to our needs, and consequently every loan or investment presupposes an excess of income over expenditure — and therefore a saving. And the conclusion has been drawn that all true capital, production capital, must have had the same origin. But that is where the mistake lies.

We have no intention, to be sure, of questioning the importance of saving. But though saving plays a considerable part in consumption, under which head we shall meet with it again, it must not be placed among the factors of production. Everything must be put in its right place. Saving only affects production when it leads to *investment*, that is to say, when the money saved is returned to production to be consumed there in the shape of capital.