THE ECONOMIC DOCTRINES OF KARL MARX

BY

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CONTENTS

PART I.

COMMODITIES, MONEY, CAPITAL

PART II.

SURPLUS-VALUE

THE ECONOMIC DOCTRINES OF KARL MARX

PART I

COMMODITIES, MONEY, CAPITAL

CHAPTER I

COMMODITIES

(1) *The Character of Commodity Production*

WHAT Marx designed to investigate in his "Capital" was the capitalist mode of production, which is the prevailing one to-day. He did not concern himself in his work with the laws of Nature, which form the basis of the process of producing; to investigate them is the business of mechanics and chemistry, not of political economy. On the other hand, he did not propose to investigate the forms of production which are common to all peoples, as such an investigation could, for the most part, only result in commonplaces, such as that man always needs tools, land, and food in order to be able to produce at all. Marx investigated the laws of movement of a definite form of social production which is peculiar to a definite period of time (the last few centuries) and to particular nations (European nations or nations originating from Europe—in recent times our mode of production has taken root

among other nations, for example, the Japanese and t
Hindoos).

This prevailing mode of production, the capital
system, with whose peculiarities we shall become m
closely acquainted, is strictly distinguished from otl
modes of production, for example, from the feudal syste
as it existed in Europe during the Middle Ages, or fr
the economy of primitive communism, as it existed on t
threshold of the development of all peoples.

If we survey present-day society we find that its wea
consists of commodities. A commodity is a product
labour which is not produced for the personal use of t
producer or of the men associated with him, but for t
purpose of being exchanged with other products. Con
quently it is not natural qualities but social qualities th
make a product a commodity. An example will make t
clear. The yarn which a girl belonging to a peasant fam
spins from flax, in order that it may be woven into lin
to be used by the family itself, is an article of use, but r
a commodity. If, however, a spinner spins flax in or
to exchange the yarn with a neighbour for wheat, or i
manufacturer causes many hundredweights of flax to
spun day after day, so that he might sell the product, t
latter is a commodity. It is also, of course, an article
use, or an article of use which has to perform a spec
social function, that is, to be exchanged. We cann
detect whether it is a commodity or not from the fact
its being yarn. Its natural form may be the same whetl
it is spun by a maiden in a peasant's cottage for her trou
seau, or in a factory by a factory girl who will perha
never use a thread of it herself. It is only from the soc
rôle, or the social function which the yarn performs, th
one can ascertain whether it is a commodity or not.

Now in capitalist society the products of labour assu
to an ever increasing extent the form of commodities.

all the products of labour are not yet commodities it is because vestiges of former modes of production still inhere in the present mode. Leaving these survivals, which are quite insignificant, out of account, we may say that all the products of labour now assume the form of commodities. We cannot understand the present mode of production unless we have a clear idea of the character of commodities. We must therefore begin with an examination of the commodity.

In our opinion, this investigation will be facilitated if first of all we exhibit the typical features of commodity production in contrast to other modes of production. We shall thereby most easily reach an understanding of the standpoint from which Marx commenced his investigation of the commodity.

As far back as we can penetrate into the history of the human race, we always find that men have acquired their means of sustenance living in smaller or larger societies, that production has always borne a social character. Before his chief books were written, Marx pointed this out clearly in his articles on " Wage, Labour and Capital," which appeared in the *Neue Rheinische Zeitung*.

" In the work of production men do not stand in relation to Nature alone. They only produce when they work together in a certain way and mutually enter upon certain relations and conditions, and it is only by means of these relations and conditions that their relation to Nature is defined, and production becomes possible.

" These social relations upon which the producers mutually enter, the terms upon which they exchange their energies and take their share in the collective act of production, will of course differ according to the character of the means of production. With the invention of firearms as implements of warfare the whole organization of the army was of necessity altered ; and with the alteration in the relations through which individuals form an

army, and are enabled to work together as an army, there was a simultaneous alteration in the relation of armies to one another.

"Thus with the change in the social relations by means of which individuals produce; that is, in the social relations of production, the powers of production are also transformed. The relations of production collectively form those social relations which we call a society, and a society with definite degrees of historical development, a society with an appropriate and distinctive character."

Some examples may serve to illustrate the foregoing. Let us take the case of a primitive people existing at a low level of production, where hunting forms the chief branch of activity for procuring food, such as the Indians. In his book on "The Hunting Grounds of the Great West," R. I. Dodge gives the following account of their methods of hunting:—

"As brains are only occasionally called into requisition, while the demands of the stomach are incessant, the tribe is habitually under the control of this 'third estate.' The power is composed of all the hunters of the tribe, who form a sort of guild, from the decisions of which, in its own peculiar province, there is no appeal. Among the Cheyennes these men are called 'dog soldiers.' The younger and more active chiefs are always enrolled among these 'dog soldiers,' but do not necessarily command. The 'soldiers' themselves command by *viva voce* determination on general matters, the details being left to the most renowned and sagacious hunters selected by them. Among these 'dog soldiers' are many boys who have not yet passed the initiatory ordeal as warriors. In short, this 'guild' comprises the whole working force of the band. It is the power which protects and supplies the women and children.

"Every year 'the great fall hunt' is made for the purpose of killing and curing a supply of meat for winter use. The 'dog soldiers' are masters now, and woe be to the unfortunate who disobeys even the slightest of their arbitrary or democratic regulations. All being ready, the best hunters are out long before the

dawn of day. If several herds of buffalo are discovered, that one is selected for slaughter whose position is such that the preliminary manœuvres of the surround and the shouts and shots of the conflict are least likely to disturb the others. . . . During all this time the whole masculine portion of the band capable of doing execution in the coming slaughter is congregated on horseback in some adjacent ravine, out of sight of the buffalo, silent and trembling with suppressed excitement. The herd being in proper position, the leading hunters tell off the men and send them under temporary captains to designated positions. Seeing that every man is in his proper place, and all ready, the head hunter rapidly swings in a party to close the gap, gives the signal, and, with a yell that would almost wake the dead, the whole line dashes and closes on the game. In a few moments the slaughter is complete. A few may have broken through the cordon and escaped. These are not pursued if other herds are in the vicinity.

" When bows and arrows alone were used, each warrior, knowing his own arrows, had no difficulty in positively identifying the buffalo killed by him. These were his individual property entirely, except that he was assessed a certain proportion for the benefit of the widows or families which had no warrior to provide for them. If arrows of different men were found in the same dead buffalo, the ownership was decided by their position. If each arrow inflicted a mortal wound, the buffalo was divided, or not infrequently given to some widow with a family. The head hunter decided all these questions, but an appeal could be taken from his decision to the general judgment of the dog-soldiers. Since the general use of firearms has rendered impossible the identfication of the dead buffalo, the Indians have become more communistic in their ideas, and the whole of the meat and skins is divided after some rule of apportionment of their own invention." (" Hunting Grounds of the Great West," R. I. Dodge, 266, 353–355.)

Be it observed that among this hunting people production is carried on socially ; various types of labour co-operate in order to achieve a collective result.

We can detect here the beginnings of division of labour and systematic co-operation. The hunters perform different kinds of work, according to their differing capacities, but are based on a common plan. The result of the co-operation of the various types of labour—"the exchange of energies," as Marx puts it in "Wage Labour and Capital"; the spoils of the chase—is not exchanged, but divided.

It may be pointed out in passing that an alteration in the means of production—the substitution of firearms for bows and arrows—involves a change in the mode of distribution.

Let us now turn to another and higher type of a social mode of production, for example, the Indian village community based on agriculture. Of the primitive communism which once prevailed there only a few scanty traces may now be found in India. But, according to Strabo. xv, 1, 66, Nearch, Alexander the Great's admiral, described countries in India where the land was common property, commonly tilled, and after the harvest the produce of the soil was divided among the villagers. According to Elphinstone, these communities were still in existence in some parts of India at the beginning of the last century. In Java village communism continued to exist in the form of a periodical re-distribution of the arable land among the villagers, who did not receive their share as private property, but merely enjoyed the usufruct thereof for a definite period. In India the arable land has mostly become the private property of the village communes. Woods, pasture land, and uncultivated land, however, are in many cases still common property, over which all the members of the community have a right of usage.

What interests us in such a village community, which has not yet succumbed to the disintegrating influence of English rule, especially of the fiscal system, is the character

which the division of labour assumes therein. We have already noted such a division of labour among the American Indians, but a much higher type is presented by the Indian village communities.

Next to the head of the community, who is called the Pateel when he consists of one person, or the Pantsch when this office is filled by a committee of five persons at the most, we find a whole series of officials in the Indian economic community: the bookkeeper, who has to supervise the financial relations of the commune to each of its members and to other communes and to the State; the Tallier for the investigation of crimes and encroachments, upon whom also devolves the protection of travellers and their safe conduct over the communal boundary into the next community; the Toti, the fields patrol and surveyor, who has to see that neighbouring communes do not encroach upon the boundaries of the fields, a circumstance that can easily happen in the cultivation of rice; the water-overseer, who distributes the water from the common tanks for irrigation, and sees that they are properly opened and closed, and that every field receives sufficient water, which is of great importance in the cultivation of rice; the Brahmin, who conducts the religious services; the schoolmaster, who teaches the children to read and write; the calendar-Brahmin or astrologer, who ascertains the lucky or unlucky days for sowing, reaping, threshing, and other important labours; the smith, the carpenter, and wheelwright; the potter; the washerman; the barber; the cow herd; the doctor; the Devadaschi (the dance maidens); sometimes even a singer.

All these have to work for the whole community and its members, and are remunerated either by a share in the open fields or by a share in the produce of the harvest. Here also, with this highly developed division of labour,

we find the co-operation of various types of labour and the division of the products.

Let us take an example which should be familiar to everybody: that of a patriarchal peasant family, which satisfies its own needs, a social structure which has developed out of a mode of production such as we have just described in the Indian communal economy, a mode of production which may be detected on the threshold of the development of all civilised peoples with whom we are familiar.

Such a peasant family likewise does not reveal isolated persons, but is a type of social organism based on the co-operation of various kinds of labour, which vary in accordance with age, sex, and season. Ploughing and sowing are carried on, the cattle are tended and milked, wood is collected, cut up and carpentered, wool is spun, woven, and knitted. The various types of labour co-operate and dovetail into each other; no more than in the previous example are the products here exchanged by the individual workers, but they are divided amongst them in accordance with the conditions.

Let us now * assume that the means of production of an agricultural community, such as we have described, are perfected to such an extent that less labour than formerly is devoted to agriculture.

Labour-power is set free, which, provided the technical means are sufficiently developed, will perhaps be devoted to exploiting a deposit of flint situated in the communal territory, and making flint tools and weapons. The productivity of labour is so great that far more tools and weapons are made than the community needs.

* A whole series of facts proves that the first stages in the development of commodity production actually proceeded upon similar lines to those we proceed to describe. Of course matters did not proceed so simply as is here indicated, but the object of our exposition is not to write the history of commodity production, but only to indicate its special peculiarities, which can be most easily recognised in contrast with other modes of production.

A tribe of nomadic shepherds in the course of its wanderings comes into contact with this community. The productivity of labour has also increased so far as this tribe is concerned, which has reached the point of rearing more cattle than it needs. It is obvious that this tribe will gladly exchange its superfluity of cattle for the superfluous tools and weapons of the agricultural community. Through this act of exchange the superfluous cattle and the superfluous tools become commodities.

The exchange of commodities is the natural consequence of the development of the productive forces beyond the limited needs of the primitive communities. The original communism becomes a fetter upon the progress of technical development when the latter has reached a certain level. The mode of production demands a widening of the circle of social labour; as, however, the separate communities are independent of, and even hostile towards, each other, this widening is not possible through the extension of systematic communistic labour, but only through the mutual exchange of the superfluous goods produced by the labour of the communities.

It is no part of our purpose to investigate how the exchange of commodities reacted upon the mode of production within the community, until commodity production became production carried on by private individuals working independently of each other, and owning the means of production and the products of their labour as private property. What we design to make clear is that commodity production is a social type of production; that it is inconceivable without social co-operation; and that it even signifies an extension of social production beyond the limits of the communistic system (embodied in the tribe, the community, or the patriarchal family) which preceded it. But the social character of production was only implicit in the latter system.

Let us take a potter and a cultivator, considering them first as members of an Indian communistic village community, and secondly as two commodity producers. In the first case, they both work in the same manner for the community; one hands over his pots, the other the fruits of his labour in the fields; one receives his share of the fruits of the field, the other his share of pots. In the second case, each carries on private work independently for himself, but each works (perhaps to the same extent as before) not only for himself, but also for others. Then they exchange their products, and it is probable that one receives the same quantity of cereals and the other as many pots as formerly. It seems that nothing has been altered in essentials, and yet the two processes are fundamentally different.

In the first case, it is obvious that society is the force which brings the various types of labour into connection, which causes one to work for the others, and directly assigns to each his share in the product of the labour of others. In the second case, each person apparently works for himself, and the manner in which he obtains the product of others does not seem to be attributable to the social character of their labour, but to the peculiarities of the product itself. It does not now seem that the potter and the cultivator work for each other, and that consequently pottery work and cultivation are necessary for civilisation, but that certain mystical qualities inhere in the pots and the field produce which bring about their exchange in certain proportions. The relation between persons, which determines the social character of labour, assumes the appearance of a relation between things, viz.: products, under the system of commodity production. So long as production was directly socialised, it was subject to the decisions and direction of society, and the relations of producers to each other were manifest.

As soon, however, as various kinds of work were carried on by individuals independently of each other, as soon, therefore, as production became planless, the relations of producers to each other appeared as the relations of products. Henceforth the determination of the relations of producers to each other no longer rested with themselves; these relations developed independently of the wills of men; the social powers grew over their heads. To the simple intelligences of past centuries they seemed to be divine powers, and to later enlightened centuries they seemed to be the powers of Nature.

The natural forms of commodities are now invested with qualities which seem to be mystical, in so far as they cannot be explained from the relations of producers to each other. Just as the fetish worshipper ascribed to his fetish qualities which had no existence in its natural constitution, so to bourgeois economy the community seems a sensuous thing endowed with supersensuous qualities. Marx calls this "the fetishism attaching to labour products when they present themselves as commodities—a fetishism which is inseparable from the mode of production."

Marx was the first to detect the fetishistic character of commodities, and, as we shall see later on, of capital also. It is this fetishism which makes it difficult to perceive the peculiarities of the commodity, and, until its importance has been properly appreciated, it is impossible to reach a clear understanding of commodity-value. The chapter in "Capital" entitled "The Fetishism of Commodities and the Secret thereof" seems to us one of the most important in the book, to which every student ought to pay special attention. It is precisely this chapter which has been most neglected by the opponents, and even by the supporters, of the Marxian doctrines.

(2) *Value*

Once we are clear about the fetishistic character of the commodity, its investigation will present relatively few difficulties.

As we have seen, the primary object of the commodity is to be exchanged. Its exchangeability, however, depends upon its being able to satisfy a human need, whether it be a real or an imaginary one. Nobody would exchange his product for another product if the latter were useless to him. A commodity must therefore be a useful thing ; it must possess use-value. Its use-value is determined by its physical properties. Use-values form the material content of wealth, whatever its social form may be. Moreover, use-value is not a quality which is peculiar to the commodity. There are use-values which are not commodities at all, as, for example, the products of a communistic society, as we have seen above. There are even use-values which are not the products of value, as fruit in the primeval forest or running water. On the other hand, there is no commodity which does not possess use-value.

As soon as use-values become commodities, that is, are exchanged with each other, it is observed that this act of exchange always takes place in certain proportions. The proportion in which a commodity exchanges with another is called its exchange-value. This proportion may vary according to time and place, but it remains a constant magnitude for a definite period and at a particular place. If we exhange 20 yards of linen for one coat, and at the same time 20 yards of linen for 40 lbs. of coffee, we may be sure that one coat would also exchange for 40 lbs. of coffee. The exchange-value of the coat wears quite a different aspect when exchanged for linen than when exchanged for coffee. But however different the exchange-value of a commodity may appear, the same content

underlies it at a definite period and in a particular place. An example from physics will serve to elucidate this social phenomenon. If we say that a body weighs 16 kilograms, or 32 lbs., or one Russian pud, we know that these expressions relate to the specific gravity of the body. In the same way, a specific content underlies the various expressions of the exchange-value of the commodity, and this we call its value.

We have now reached the most important fundamental category of political economy, without a knowledge of which the operation of the prevailing mode of production cannot be properly understood.

What constitutes the value of a commodity ? This is the question to be answered.

Let us take two commodities, for example, wheat and iron. Whatever their exchange relation may be, it can always be represented by a mathematical equation, for example, 1 bushel of wheat = 2 cwts. of iron. But, as we shall remember from our school days, mathematical operations can only be carried on with equivalent magnitudes. For instance, we can subtract 2 apples from 10 apples, but not 2 nuts. There must consequently be some common property in wheat and iron which renders it possible to equate them, and it is that which is their value.

Now is this common property a natural attribute of the commodities ?

As use-values they are only exchanged because they have different, not similar or common, natural qualities. These qualities constitute the motive for the exchange, but they cannot determine the proportions in which it takes place.

If we take away from commodities their use-value, only one quality remains to them, that of being products of labour. But if we abstract from products their use-value,

we also abstract the particular kinds of labour which have created them: they are no longer the products of the carpenter's or the spinner's labour, etc., but are only products of human labour in general. And as such they are values.

Therefore a commodity possesses value only because homogeneous or general human labour is embodied in it. How then is the magnitude of its value to be measured? By the quantity of value-forming material, or labour, contained in it. Now the quantity of labour is measured by time.

It might seem that if the value of a commodity is determined by the time expended upon its production, the idler and more unskilful a man is the more valuable his commodity would be. But the labour we are concerned with here is not individual, but social, labour.

Let us remember that commodity production represents a system of various kinds of labour which, although independent of each other, are carried on in a social connection. "The combined labour-power of the community, represented by the value of the world's commodities, counts here as one homogeneous human labour-power, although it consists of the labour-power of innumerable individuals. The labour-power of any of these individuals is the same as that of any other of them, in so much as it bears the character and has the effect of a social average labour-power, and consequently in the production of a commodity only the average labour-time commonly required for that production is consumed. Socially necessary labour-time is the labour-time requisite for the production of a given use-value under existing normal conditions of production, and with the average degree of skill and intensity of labour." If the productivity of labour changes, it involves an alteration in the socially necessary labour-time, and consequently in value.

The time necessary to produce a certain product must of course be of interest to man under every mode of production. Even under a communistic mode of production, it must exercise an influence upon the degrees in which the various types of labour co-operate.

Let us again take the example of an Indian communistic village community. It employs two smiths for the manufacture of agricultural implements. An invention raises the productivity of labour to such an extent that only one smith is needed to manufacture the required agricultural implements within a given time. Two smiths are no longer entrusted with this work, but only one ; the second smith is perhaps employed in the forging of weapons or the making of ornaments. On the other hand, the productivity of field labour remains the same. As much labour-time as formerly must be expended in order to satisfy the requirements of the community upon the same scale.

Under these circumstances, every member of the community receives the same share of foodstuffs as before, but a distinction now arises. The productivity of the smith's labour has doubled ; only one share of foodstuffs, instead of two, is now assigned for the manufacture of agricultural implements. The change in the relation between the various types of labour is here a very simple and transparent one. It assumes a mystic character as soon as smith's labour and field labour cease to co-operate directly and are only brought into relation with each other through their products. The change in the productivity of smith's labour then appears as a change in the exchange-relation of the product of smith's labour with other products, as an alteration in its value.

Ricardo recognised that the magnitude of the value of a commodity was determined by the quantity of labour expended upon its production. He did not, however,

perceive the social character of the value that is conceal in the value-form of the commodity, that is, the fetishi of the commodity. Nor did he distinguish clearly betwe that side of labour which forms the exchange-value o commodity, and that side which forms its use-value.

We have already described the fetishistic character the commodity. Let us now follow Marx in his inves gation of the duplex character of the labour embodied the commodity.

The commodity appears to us both as a use-value a as value. Its material composition is furnished by Natu Its value is formed by labour, but so is its use-value. Nc in what manner does labour form value, and in wh manner does it form use-value ?

On the one hand, labour appears to us as the productiv expenditure of human labour-power in general ; on th other hand, as specific human activity for the attainme of a given object. The first aspect of labour forms th common element in all the productive activities carried c by men. The second side varies with the nature of th activity. In the case of smith's labour and field labou the element common to both is that they represent th expenditure of human labour-power in general. But eac of them differs as regards purpose, mode of operatio subject, instruments, and result.

The specific variety of human activity which aims at definite end forms the use-value. In its manifold variet it forms the basis of commodity production. Comm dities are only exchanged because they are differen Nobody would exchange wheat for wheat or hemp fc hemp, but wheat would be exchanged for hemp. Us values can only be brought into juxtaposition as comm dities when they embody qualitatively different kinds c useful labour.

As values, however, commodities differ not qualita

tively, but quantitatively. They are exchanged because they differ from each other as use-values. In the act of exchange they are compared and put in a certain ratio with each other because as values they are equal. Value cannot be formed by labour as a definite and appropriate kind of activity, in its qualitative aspect; it can only be formed by labour of an equal character in all branches of activity, as the expenditure of human labour-power in general. Regarded as expenditures of labour-power, the various kinds of labour differ, not qualitatively, but quantitatively, just as values do. From the standpoint of the formation of value, every kind of labour is regarded as simple, average labour, as the expenditure of mere labour-power, by an average man under normal conditions. In this connection skilled labour only counts as a multiple of simple labour. A small quantity of skilled labour is equated with a larger quantity of simple labour. In accordance with the character of commodity production, this process, which fixes the relations of the various kinds of labour, reducing each of them to simple labour, to each other, is a social, but at the same time an unconscious, process. It seems, however, to those who are under the spell of the fetishism of the world of commodities that it is not social, but natural causes which present the various kinds of skilled labour as multiples of simple labour. A number of academic socialists, who desired to "constitute" value, that is to fix it once for all, have attempted to discover these alleged natural causes, and to fix the quantity of value created by every unit of labour (*cf.* Rodbertus' "Normal Working Day"). In reality these causes are social, and are subject to continuous alteration.

There are few provinces of investigation which reveal so many erroneous conceptions as that of value. A number were indicated by Marx himself, in particular an error which is often made by supporters as well as by

opponents of the Marxian doctrines: the confusing of value with wealth. The sentence is very often put into Marx's mouth that labour is the source of all wealth. Readers who have followed the foregoing exposition will easily perceive that this is in flat contradiction to the basis of the Marxian ideas, and presupposes entanglement in the fetishism of the commodity world. Value is a historical category, which is valid only for the period of commodity production; it is a social relation. Wealth, on the other hand, is something material, and consists of use-values. Wealth is produced under all modes of production; there is a form of wealth which is only supplied by Nature, and in which no labour is contained at all; there is no form of wealth, however, which comes into existence through the agency of human labour alone. "Labour is not the only source of the material wealth resulting from the use-values it produces," said Marx. "Labour is its father, as William Petty says, and the earth is its mother."

Other things being equal, an increase in the productivity of labour is accompanied by an increase in the material wealth of a country; and *vice versâ*. The total of the existing values may at the same time remain unchanged, provided the quantity of labour expended be the same. A favourable harvest increases the wealth of a country, but the total of commodity values represented by this harvest would be the same as in the previous year if the amount of socially-necessary labour expended remained unaltered.

If Marx did not say that labour is the source of all wealth; if this sentence is based upon the confusion of exchange-value with commodity-value, then the various conclusions that have been fastened on to Marx in connection with this sentence fall to the ground. It may now be seen with what little justification many of Marx's

opponents have reproached him with overlooking the part played by Nature in production. Indeed, these opponents have overlooked something themselves, namely, the distinction between the body of the commodity and the social relation which it represents :—

" To what extent some economists are misled by the fetishism inherent in commodities, or by the objective appearance of the social characteristics of labour, is shown, amongst other ways, by the dull and tedious quarrel over the part played by Nature in the formation of exchange value. Since exchange value is a definite social manner of expressing the amount of labour bestowed upon an object, Nature has no more to do with it than it has in fixing the course of exchange."

Marx has not therefore " overlooked " the part of Nature in the production of use-values. If he rules it out of account in the determination of value, it is not out of forgetfulness, but owing to the possession of an insight into the social character of commodity production which is denied those economists who deduce the laws of society from a condition of unsociality, from men considered in isolation.

Another error which is fairly common in connection with the Marxian theory of value consists in confusing the value-forming property of labour with the value of labour-power. These two conceptions must be kept strictly apart from each other. Labour considered as the source of value can no more have a value than gravity can have weight or warmth a temperature. So far we have only been dealing with the value which is formed by simple or skilled labour, and not with the value which labour-power possesses and which finds expression in the wage of the worker who is the embodiment of labour-power.

So far we have been presupposing simple commodity

production and simple commodity exchange, and labour-power as a commodity does not yet exist for us.

With respect to human labour-power and its value we shall deal more fully later on. At this stage our purpose is to indicate an error.

Where they do not contradict assertions that Marx never made or merely consist of terms of reproach, such as the favourite one of Marxian dogmatism, most of the objections to the Marxian theory of value are based on such errors.

Such errors can only be guarded against by keeping steadily in mind the character of such a law as the law of value is.

Every natural-scientific or social law is an attempt to explain the processes of Nature or of society. But hardly any one of these processes is determined by a single cause. The most varied and complicated causes underlie the most varied processes, and these processes themselves do not operate independently of each other, but intersect each other in the most various directions.

The investigator of ramifications in society and in Nature has therefore a two-fold task. First of all he must separate the various processes from each other: isolate them. Secondly, he must separate the causes which underlie these processes, the essential from the inessential, the regular from the accidental. Both kinds of investigation are only possible through abstraction. The scientific investigator is assisted in his labours by a series of infinitely perfected instruments and methods of observation and experiment. The investigator of social laws is obliged to forego the latter, and with respect to the former, he must content himself with very imperfect expedients.

By means of abstraction, the investigator is enabled to perceive the law which underlies the phenomena which he designs to explain. Without a knowledge of this law, the

phenomena in question cannot be explained; but the knowledge of one law alone never suffices to explain these phenomena fully. One cause may be weakened by another, and even completely neutralised in its effect. It would, however, be wrong to infer from such a case that the cause did not exist at all. The law of gravity is valid, for example, in a vacuum, where a piece of lead and a feather fall with equal rapidity to the ground. In an air-filled space the result is quite different, on account of the resistance of the atmosphere. Yet the law of gravity is not thereby impugned.

So it is with the case of value. When commodity production had become the prevailing mode of production, the persons engaged therein must have been struck by the regular character of commodity prices, and prompted to try to investigate the causes which underlay them. The investigation of commodity prices led to the determination of the magnitude of value.

But the value of a commodity is the sole cause of its price just as little as gravity is the sole determining cause of the phenomena of gravitation. Marx himself points out that there are commodities whose prices may remain below their value, not only temporarily, but constantly. Thus, for example, gold and diamonds are probably never sold at their full value. And, under certain circumstances, the commodity labour-power may be sold below its value.

Marx has even shown that in the capitalist mode of production the law of value is so affected by the influence of profit that the prices of most commodities are inevitably either above or below their value. Nevertheless, the law of value still remains operative, as these deviations of price from value can only be explained with the assistance of the law of value. At this juncture we can only mention this fact without pausing to discuss it more fully. Its

understanding requires a knowledge of the law of capital and of profit, and we shall return to this subject later.

A great number of the objections to the Marxian theory of value are based upon the confusion of value with price. Both conceptions must be kept strictly apart. But, as already pointed out, one must not be blinded by the fetishistic character of the commodity, nor mistake the social relations which find expression in the body of the commodity for its natural qualities.

If the student never loses sight of the fact that commodity production is a type of social production, in which individual businesses produce for each other, although not with each other, and that the value of commodities is not a relation of things, but represents a relation of men to each other concealed in a material shell, he will know how to interpret the sentence that forms the basis of Marx's analysis of the capitalist system :

"It is thus only the quantity of socially necessary labour, or the socially necessary time of labour for the production of a use-value which regulates the magnitude of its value."

(3) *Exchange Value*

The magnitude of value of a commodity is determined by the labour-time socially necessary for its production. But the magnitude of value is not expressed in this manner. One does not say : "This coat is worth forty labour-hours," but : "It is worth as much as 20 yards of linen or 10 grammes of gold."

So far the coat, regarded by itself, is not even a commodity ; it becomes such only if I resolve to exchange it. Consequently, the value of a commodity does not become manifest unless I compare it with that of another commodity, with which I purpose to exchange the former. The magnitude of value of a commodity is indeed determined

by the labour socially necessary for its production; but it is expressed through its relation to the magnitudes of value of one or several other commodities, through its exchange relation. Middle-class political economy often assumes that it is the exchange relation of a commodity which determines its magnitude of value.

An example will expose the absurdity of this notion. Let us take a sugar loaf. Its weight is already given, but I can only express it through comparison with the weight of another body, for example, iron. I place the sugar loaf in a scale, and in the other a corresponding number of pieces of iron, each being of a specific weight, which we will call a pound. The number of pieces of iron apprises us of the weight of the sugar; but it would be stupid to try to make out that the sugar weighed 10 lbs., for instance, because I had placed ten pound-weights in the other scale. I had rather to place ten of such weights in the scale because the sugar weighed 10 lbs.

This clearly shows how the matter stands. But the position is the same with regard to the magnitude of value and the form of value.

The expression for the weight of a body offers many similarities with the value-expression of a commodity, that is, the form in which we express the magnitude of its value. A sugar loaf weighs 10 lbs., which means, strictly speaking, if we carry our example further, that a sugar loaf is as heavy as the ten particular lumps of iron; similarly we may say of a coat that it is worth as much as, for example, 20 yards of linen.

We could not place iron and sugar, as bodies, in a certain relation to each other if a natural quality were not common to them both: weight; nor would we be able to bring coat and linen, as commodities, in a relation to each other if they did not possess a common social attribute: that of being the products of general human labour, or values.

In the first equation iron and sugar play two different parts: a sugar loaf is as heavy as 10 lbs. of iron. Here the sugar appears as sugar, the iron does not appear as iron, but as the embodiment of weight, as its phenomenal form. In this equation we do not abstract the specific material qualities of sugar, but we do abstract those of iron.

A similar phenomenon is presented by the equation: one coat = 20 yards of linen.

Both the coat and the linen are commodities, and therefore use-values and values. But in the value-form, in the exchange-relation, the coat appears here only as a use-value, while the linen appears as the phenomenal form of value.

I can weigh the sugar not only with iron weights, but also with brass or lead weights, etc. And I can express the value of the coat not only in linen, but also in any other commodity. In the equation one coat = 20 yards of linen, I therefore abstract altogether the specific natural form of the linen, which in this relation counts only as value, as the embodiment of general human labour. The linen is the phenomenal form of the *value* of the coat in contra-distinction to the *substance* of the coat. The contrast between use-value and commodity-value which is inherent in the coat, as in every other commodity, is reflected in the expression of value, within which its bodily form as coat only figures as a type of use-value, while the bodily form of the commodity linen only figures as a type of the commodity world, as the value-form.

Nevertheless, the use-value of the commodity in which the value of the other commodity is expressed—Marx calls it the equivalent—is not a matter of indifference. The two commodities must be different. The equation 1 coat = 1 coat is meaningless.

I can express the value of the coat not only in linen, but

in any other commodity of a different nature. And I can also reverse the equation and express the value of the linen, as well as that of any other commodity, in the coat.

I can formulate the equation :

$$1 \text{ coat} = \begin{cases} 20 \text{ yards of linen,} \\ 10 \text{ lbs. of tea,} \\ 40 \text{ lbs. of coffee.} \\ 10 \text{ cwts. of iron,} \\ 2 \text{ bushels of corn, etc.} \end{cases}$$

I may also reverse it and say :

$$\left.\begin{array}{l} 20 \text{ yards of linen} \\ 10 \text{ lbs. of tea} \\ 40 \text{ lbs. of coffee} \\ 10 \text{ cwts. of iron} \\ 2 \text{ bushels of corn, etc.} \end{array}\right\} = 1 \text{ coat.}$$

Both equations seem to say the same thing, but they say the same thing regarded merely as *mathematical* equations ; as different forms of the expression of value, however, they have a logically and historically different signification.

In the beginnings of commodity production, products were exchanged only here and there, occasionally and accidentally.

This period may be designated by an elementary value-equation, in which one commodity is only placed alongside another in a certain ratio, for example, 1 bronze hammer = 20 lbs. of rock-salt ; this form Marx calls the *elementary or the accidental value-form.* So soon, however, as a labour product, for example, cattle, is exchanged with other labour products, no longer by way of exception, but as a matter of course, the expression of value assumes the form of the first of the two above-mentioned equations, as, for example :

$$1 \text{ cow} = \begin{cases} 2 \text{ mantles,} \\ 1 \text{ sword,} \\ 1 \text{ girdle,} \\ 10 \text{ sandals,} \\ 3 \text{ goblets, etc.} \end{cases}$$

This form of value, instances of which may be found in Homer, Marx calls the *total or expanded form of value.*

But commodity production develops still further. The number of labour products which are fabricated for exchange, and therefore as commodities, grows, and the habitual act of exchange embraces an ever greater number of the most varied commodities. Not only cattle, but swords, girdles, goblets, etc., are now exchanged as a normal social act. The most practicable of these commodities, cattle for example, is that in which the values of commodities are most frequently expressed, and eventually it becomes the sole commodity used for this purpose. Then the point is reached at which the second of the above-mentioned formulæ, the general form of value, comes into operation.

Let us now consider more closely the equivalent form in this equation. As we have already seen, the equivalent form appears as the embodiment of human labour in general. But in the previous form of expression it was only accidentally and temporarily that a commodity played this part. In the equation 1 coat = 20 yards of linen, the linen at any rate figures only as the phenomenal form of value. But if 20 yards of linen is equated with 1 bushel of corn, or again with 1 coat, it is now corn or coat which appears as the embodiment of general human labour, while the linen figures again as use-value. The case is otherwise with the general form of value. Now only a single commodity serves as the equivalent. Like all other commodities, it is use-value and commodity-value both before and after. But all the other commodities now appear to confront it only as use-values, while it itself figures as the general and sole phenomenal form of value, as the general social embodiment of abstract human labour. It is now itself the commodity with which all the other commodities are directly exchangeable, and which

therefore everybody accepts. On the other hand, all the other commodities thereby lose the capacity and possibility of being directly exchangeable with each other. Each exchange of a pair of commodities can only be effected through the medium of the general equivalent, in which the values of all other commodities are reflected.

(4) *The Exchange of Commodities*

In order that an exchange of commodities may be effected, two conditions must be fulfilled: (1) The products to be exchanged must be use-values for those who do not own them, and non-use-values for their owners; (2) The exchangers must mutually recognise each other as the owners of the commodities to be exchanged. The juridical relations of private property are only the reflexion of the relation of the wills of the exchanging persons, which are determined by the economic relations. Men do not begin to exchange commodities because they mutually regard each other as the owners of alienable things, but they began mutually to recognise each other as owners because they chanced to exchange commodities with each other.

The earliest form in which a labour product becomes a non-use-value for its owner, and therefore the first form of the commodity, is that of a superfluity of labour products above the needs of their owner. The products are not yet destined for exchange as a matter of course, but are produced for self-consumption. They only become commodities through exchange.

As regards the second point, the mutual recognition by the owners of alienable things as their private property, this is only possible where independent persons confront each other.

"But such a state of reciprocal independence has no existence in a primitive society based on property in common, whether

such a society takes the form of a patriarchal family, an ancient Indian community, or a Peruvian Inca State. The exchange of commodities, therefore, first begins on the boundaries of such communities, at their points of contact with other similar communities or with members of the latter. So soon, however, as products once become commodities, they also, by reaction (in time) become so in its internal intercourse."

In the beginnings of exchange, the magnitude of value and the form of value are very little developed. The ratio of the magnitudes or quantities in which products exchange is at first an accidental and extremely fluctuating one. But the exchange of products becomes more and more a normal social act. The practice gradually creeps in of not merely exchanging the use-values that are superfluous to the producer's own needs, but of producing use-values for the sole purpose of exchange. Consequently the ratio in which they are exchanged becomes increasingly dependent upon their conditions of production. The magnitude of value of a commodity begins to be a magnitude which is determined by the labour-time necessary for its production.

So soon, however, as labour products are produced solely for the purpose of being exchanged, the contrast between use-value and value latent in the commodity nature is bound to become manifest.

This contrast which is potential in every commodity finds its expression, as we know, in the form of value. In the expression 20 yards of linen = 1 coat, the linen itself tells us that it is use-value (linen) and value (coat equivalent). But in the elementary form of value, it is still difficult to fix this antagonism, as the commodity which here serves as the embodiment of general human labour assumes this *rôle* only temporarily. In the expanded form of value the antagonism distinctly reveals itself, as now several commodities serve or are able to serve as the

equivalent, because they possess the common property of being labour products or values.

But the more the exchange of commodities develops, the more labour products become commodities, the more necessary a *general* equivalent becomes. In the beginnings of exchange, each person directly exchanges what he does not need for what he does need. This becomes increasingly difficult in the degree that commodity production becomes the general form of social production.

Let us assume, for instance, that commodity production is already so far developed that tailoring, bakery, butchery, and carpentering form independent businesses. The tailor alienates a coat to the carpenter. For the tailor the coat is a non-use-value, for the carpenter a use-value. But the tailor does not want any more carpenter's products, as he has furniture enough. The tables and chairs are non-use-values for the carpenter, and also for the tailor. On the other hand, the tailor needs bread from the baker and meat from the butcher, for the times are past when he baked at home and fattened pigs. The meat and bread which the tailor needs are non-use-values for the butcher and baker, who, however, require no coat at the moment. The tailor is therefore in danger of starving, although he has found a customer for his coat. What he requires is a commodity which serves as general equivalent, which, as the direct embodiment of value, has use-value for everybody as a matter of course.

The same development that renders this equivalent necessary also brings it into existence. So soon as the various commodity owners exchange various articles with each other, it is inevitable that several of the latter are compared as values with a common type of commodity, and that therefore they find a common equivalent. At first a commodity serves in this capacity only temporarily and accidentally. So soon, however, as it is advantageous

that a particular commodity should assume the general equivalent form, the connection of the equivalent form with this commodity is bound to become ever closer. The type of commodity to which the general equivalent form will cling is determined by various circumstances. Eventually it was the precious metals which achieved the monopoly of serving as the general equivalent form, and which became money. Partly this may have been due to the fact that from the earliest times ornaments and ornamental material were important articles of exchange, but the factor that was decisive in this connection was that the natural properties of gold and silver corresponded to the social functions which a general equivalent has to fulfil. Here we need only refer to the two facts that the precious metals are always of the same quality and deteriorate neither in air nor in water, being therefore practically unalterable, and that they are divisible at will and capable of being re-united. Consequently they are very suitable for the embodiment of indistinguishable, general human labour, for the representation of magnitudes of value which differ in respect of number (quantitatively) and not in respect of qualities (qualitatively).

Gold and silver could only secure the monopoly of serving as general equivalent because they confronted the other commodities as commodities. They could only become money because they were commodities. Money is neither the invention of one or several men, nor is it a mere token of value. The value of money and its specific social functions are not arbitrary creations. The precious metals became the money commodity through the part they played as commodities in the exchange process.

CHAPTER II

MONEY

(1) *Price*

THE first function of money consists in serving as a measure of value, and providing the world of commodities with the material wherein value is expressed.

It is not through the medium of money that commodities become similar and comparable. It is because, as values, they are materialised human labour, and to that extent are similar, that they can be commonly measured in the same specific commodity, which they thereby transform into their common measure of value or into money. Money as the measure of value is the necessary phenomenal form of the measure of value inherent in commodities, viz., labour-time.

The expression of value of a commodity in the money commodity is its money form or its price. For instance 1 coat = 10 grammes of gold.

The price of the commodity is something quite distinct from its natural properties. It cannot be seen or felt in the commodity. The commodity owner must convey this information to the purchaser. But in order to express the value of a commodity in the gold commodity, that is to fix its price, real gold is not necessary. The tailor need have no gold in his pocket to be able to explain that the price of the coat which he offers amounts to 10 grammes of gold. Consequently, in measuring value, only imaginary money is used.

Nevertheless, price depends upon the actual money commodity. Apart from all disturbing incidental circumstances, the tailor may fix the price of his coat at 10 grammes of gold, if as much socially necessary labour is embodied in such a quantity of gold as in the coat. If the tailor expresses the value of his coat, not in gold, but in silver or copper, the price expression will be different.

Where two different commodities function as the measure of value, for example, gold and silver, all commodities possess two different price expressions, gold and silver prices. Every change in the value-relation of gold to silver causes price disturbances. The duplication of the measure of value is in fact an absurdity, a contradiction of the function of money as the measure of value. Whenever efforts have been made legally to fix two commodities as measures of value, it has always been one which has in fact functioned as the measure of value.

In several countries gold and silver have been legally prescribed as co-existing measures of value. But experience has always shown this legislation to be absurd. Like every other commodity, gold and silver are exposed to constant fluctuations in value ; if both are placed on an equal footing by the law, if payment may be made in one or the other metal according to choice, payment would be made in the metal whose value was falling, and the metal whose value was rising would be sold where it could be sold advantageously, abroad. In countries where the double currency prevails, the so-called Bimetallism, only one of the money commodities functions in reality as the measure of value, and that is the one whose value is falling. The other, whose value is rising, measures its price, like any other commodity, in the over-estimated metal and functions as a commodity, not as a measure of value. The greater the discrepancies in the value relation

between gold and silver, the more clearly the absurdity of Bimetallism comes to light.

For the sake of simplicity, Marx, in "Capital," assumes gold to be the only money commodity. As a matter of fact, gold tends to become the money commodity in all capitalist countries.*

In the price expression each commodity is imagined as a specific quantity of gold. It is, of course, necessary to measure with each other the various quantities of gold which represent the various prices, to establish a standard of price. The metals possess such a natural standard in their weights. The weight names of the metal, pound, livre (in France), talent (in ancient Greece), als (among the Romans), etc., consequently form the original names of the units of the standard of price.

By the side of its function as the measure of value, we shall now become acquainted with a second function of money: that of being a standard of price. As a measure of value, money transforms the values of commodities into certain imaginary quantities of gold. As a standard of price it measures the various quantities of gold with a certain quantity of gold which is accepted as a unit, for example a pound of gold.

The distinction between the measure of value and the standard of price is clear, when we observe the effect produced on each by an alteration in value.

* The value of the supplies of money (coins and bars) in the countries of the modern mode of production was estimated:—

	Gold.	Silver.
1831	£111,600,000	£414,000,000
1880	£658,500,000	£420,300,000

Between 1880 and 1908, £1,500,000,000 worth of gold coins and £1,000,000,000 worth of silver coins were coined in the various currencies of the world.

Between 1911 and 1922, the value of the gold production amounted to £1,026,950,000, whereas the value of the silver production in the same period only amounted to £385,000,000.

In course of time, therefore, the preponderance is being shifted more and more in favour of gold.

Let us assume that the unit of measure of the standard of price is 10 grammes of gold. Whatever the value of gold may now be, 20 grammes of gold will always be worth twice as much as 10 grammes. A rise or fall in the value of gold has therefore no effect upon the standard of price.

Let us, however, assume that gold is the measure of values. But the value of gold fluctuates ; one day it may happen that twice as much gold as previously will be produced in the same socially-necessary labour-time. In the productivity of tailoring, however, no alteration has taken place. What happens ? The price of a coat now amounts to 20 grammes of gold. The change in the value of gold therefore expresses itself perceptibly in so far as it functions as the measure of value.

The standard of price may be arbitrarily fixed, just like, for example, the measurement of length. On the other hand, this standard requires general validity. In the first place it is conventional and given by the traditional weight divisions. Eventually it is fixed by law. The various aliquot parts of the precious metal receive official baptismal names which differ from their weights. Prices are now not expressed in gold weights, but in the legally valid reckoning names of the gold standard.

Price is the money-name of the magnitude of value of a commodity. But at the same time it is the expression of the exchange-ratio of the commodity with the money-commodity, with gold. The value of a commodity can never become manifest as an isolated phenomenon, for itself alone, but always only in the exchange-ratio with another commodity. This ratio, however, is subject to the influence of other circumstances than the magnitude of value alone, and this fact provides the opportunity for a deviation of price from the magnitude of value.

If the tailor says that the price of his coat is 10 grammes

of gold, or 30*s*., he means that he is prepared at any time to yield up his coat for 10 grammes of gold. But he would be very premature if he intended to convey that everybody was immediately willing to give him 10 grammes of gold for his coat. The transformation of the coat into gold is indeed essential if it is to fulfil its purpose as a commodity. The commodity pants for money; prices are the ardent love shafts aimed at the glittering cavalier. But the course of love runs differently in the commodity market from what it does in novels. They do not always reciprocate. The wooing gold passes by many commodities, who are obliged to lead a joyless existence in shop windows.

Let us look at the adventure of the commodity in its intercourse with gold somewhat more closely.

(2) *Buying and Selling*

Let us accompany our old acquaintance the tailor to the market. He exchanges the coat he has made for 30*s*. With this sum he buys a bottle of wine. Here we have two diametrically opposed transformations: first the conversion of commodity into money; then the re-conversion of money into commodity. But the commodity at the end of the whole process is a different commodity from that at the commencement thereof. The former was a non-use-value for its owner, the latter is a use-value for him. The usefulness of the former to him consisted in its property as a value, as the product of general human labour; in its exchangeability with another product of general human labour, with gold. The usefulness of the other commodity, the wine, consists for him in its material properties, not as the product of general human labour, but of a definite form of labour, of vintage, etc.

The form of the elementary circulation of commodities runs: Commodity—Money—Commodity; that is, to sell in order to buy.

Of the two metamorphoses, Commodity—Money and Money—Commodity, the first is, as we know, the most difficult. It is no trouble to buy when one has money, but it is incomparably more difficult to sell in order to obtain money. And money is necessary to every commodity owner under a system of commodity production. The more the social division of labour is developed, the more one-sided are its operations, the more manifold its needs become.

If the commodity is to effect its *salto mortale*, its conversion into money, it is above all things necessary that it is a use-value, that it satisfies a need. If this be the case, if it succeeds in converting itself into money, the first question that arises is how much money ?

This question does not concern us very much for the moment. Its answer belongs to the analysis of the laws of prices. What interests us here is the metamorphosis : Commodity—Money, irrespective of whether a gain or loss in magnitude of value is thereby involved.

The tailor parts with his coat and receives money therefor. Let us assume that he sells it to a countryman. What is a sale on the part of the tailor is a purchase on the part of the countryman. Every sale is a purchase and *vice versâ*. Where, however, does the countryman's money come from ? He received it in exchange for corn. If we follow the track of the money commodity, the gold, from its source of production at the mines, passing from one commodity owner to another, we find that each of its changes of ownership has been the result of a sale.

The metamorphosis Coat—Money, forms, as we have seen, not one but two metamorphoses. The one is : Coat —Money—Wine. The other : Corn—Money—Coat. The beginning of the metamorphosis of one commodity is at the same time the close of the metamorphosis of another commodity, and *vice versâ*.

Let us assume that the vintner buys a kettle and coals with the 30*s*. which he received for his wine. Then the metamorphosis, Money—Wine, is the last link in the series Coat—Money—Wine, and the first of two other series Wine—Money—Coal and Wine—Money—Kettle. Each of these metamorphoses forms a circuit, Commodity—Money—Commodity. It begins and ends with the commodity form. But every circuit of a commodity intersects the circuits of other commodities. The whole movement of these innumerable intersecting circuits forms the circulation of commodities.

The circulation of commodities is essentially different from the direct exchange of commodities or barter. The latter is brought about by the growth of the productive forces beyond the limits of primitive communism. Through the exchange of products the system of social labour is extended beyond the boundaries of a community, the effect being that various communities and the members of various communities work for each other. But the simple exchange of products on its part formed a further obstacle, as the productive forces were continually developing, and this obstacle was overcome by the circulation of commodities.

The simple exchange of products necessitates that I should take the product of the person who takes my product at the same time. This obstacle is removed in the circulation of commodities. Every sale is indeed at the time a purchase; the coat cannot be sold by the tailor unless it is bought by another, by the countryman. But it is not in the least necessary that the tailor should buy something else immediately. He may put the money in his purse and wait until it suits him to buy something. Nor is he at all obliged now or later to buy something from the countryman who bought the coat from him or to buy in the market where he sold. The time, local, and

individual limits of the exchange of products, therefore, vanish with the circulation of commodities.

Yet another distinction between barter and the circulation of commodities must be recorded. The simple exchange of products consists in the alienation of superfluous products, and at first leaves unaffected the forms of production of primitive communism, forms of production which were under the direct control of the participants.

The development of the circulation of commodities, on the other hand, renders the relations of production ever more complicated and more uncontrollable. The simple producers become increasingly independent of each other, but they are more than ever dependent upon social ramifications which they are no longer able to control, as was the case under primitive communism. Consequently the social powers assume the shape of blindly-working natural forces which, if impeded in their activity or disturbed in their equilibrium, assert themselves in catastrophes similar to storms and earthquakes.

And the seeds of such catastrophes are developed with the circulation of commodities. The possibility which it offers of being able to sell without being immediately obliged to buy contains the possibility of congested markets, of crises. But the productive forces must develop beyond the limit of simple commodity production before the possibility becomes a reality.

(3) *The Currency of Money*

Let us recall the commodity circuits which we followed in the last section: Corn—Money—Coat—Money—Wine —Money—Coal, etc. The progress of these circuits also imparts a movement to the money, but this is not a circuit. The money which came out of the countryman's pockets moves farther and farther away from him.

The movement imparted to money by the circulation

of commodities constantly sends it farther from its starting-point, in order to make it pass without ceasing from one hand to another. This it is which is called the course of money, or its *currency*.

The currency of money is the consequence of the movements of commodities, not, as is often assumed, their cause. At the stage of the simple circulation of commodities where we are now remaining in our investigation, where as yet there is no mention of ordinary commerce and re-selling, that is to say, at the first stage of its course, the commodity as a use-value soon falls out of circulation, in order to be swallowed up in consumption, and its place in the circuit is taken by a new use-value or an equivalent commodity-value. In the circuit Corn—Money—Coat, corn disappears from circulation after the first metamorphosis Corn—Money, but various use-values return to the seller of corn: Money—Coat. Money as the medium of circulation does not drop out of circulation, but constantly revolves in its sphere.

The question now arises, how much money does the circulation of commodities require?

We know already that every commodity is equivalent to a certain quantity of money, and that, therefore, its price is fixed before it comes into contact with the real money. Consequently, the price to be realised for every single commodity and the total of the prices of all commodities are settled beforehand—assuming the value of gold to remain constant. The total prices of commodities are a definite imaginary amount of gold. If the commodities are to circulate, it must be possible to transform the imaginary sum of gold into a real sum of gold; the quantity of the circulating gold is therefore determined by the total prices of the circulating commodities. (It must be kept in mind that we are still within the sphere of the simple circulation of commodities, where credit

money, the adjustments of payments, etc., are as yet unknown.) Assuming that prices do not vary, this sum total of prices fluctuates with the quantity of the circulating commodities; if the quantity of commodities remains constant, it varies with their prices, irrespective of whether such price changes are caused by a fluctuation in market prices, or through a change in the value of gold or of commodities; irrespective of whether all or only a few commodities are affected thereby.

But the sales of commodities are not always partial, nor do they all proceed simultaneously.

Let us revert to our former example. We have the series of metamorphoses: 5 bushels of Corn—30*s*.—1 Coat—30*s*.—40 litres of Wine—30*s*.—2 tons of Coal—30*s*. The sum total of the prices of these commodities amounts to 120*s*., but to effect the four sales 30*s*. alone are sufficient, which change their place four times, and thus execute four moves one after another. If we assume that these sales all take place within one day, this gives us the amount of money functioning during one day as a medium of circulation within a certain sphere of circulation as $\frac{120}{4} = 30s.$, or as commonly expressed:

$$\frac{\text{Total Commodity-prices}}{\text{Times the money changes hands}} = \text{Total money in circulation during a definite period.}$$

The number of movements made by the various pieces of money in a country is of course a varying one; one coin may lie in a coffer for years, whilst another may execute thirty movements in a day. But its average velocity or movement is a definite magnitude.

The velocity of the movement of money is determined by the velocity of the movements of commodities. The quicker commodities disappear from circulation, in order to be consumed, and the more quickly they are replaced

by new commodities, all the more rapid is the movement of money. The slower the movement of commodities, the slower is the movement of money, and the less money there is seen. People whose glance is only fixed on superficialities then believe that too little money is in existence, and that the shortage of money is the cause of the feebleness of circulation. While this contingency is possible, it hardly happens to-day for long periods.

(4) *Coins: Paper Money*

It was of course a great inconvenience for intercourse when the quality and weight of every piece of money metal which changed hands at every purchase and sale had to be tested. This operation was dispensed with as soon as a generally recognised authority guaranteed the correct weight and the correct quality of every piece of money. Thus metal coins were minted by the State from bars of metal.

The coin-shape of money sprang from its function as a medium of circulation. But once money was minted into coins, the latter were soon invested with an existence in the sphere of the circulation process independent of their quality as coins. The guarantee of the State that a coin contained a certain amount of gold or was equal to it, soon sufficed, under certain circumstances, to cause the coins to function as a means of circulation quite as well as the full and real quantity of gold.

This is brought about by the currency of pieces of money themselves. The longer a coin is in circulation, the more it gets used up, the more its face and intrinsic values deviate from each other. An old coin is lighter than one just come from the Mint—yet, under certain circumstances, both may represent equal values as a medium of circulation.

The distinction between face and real values is shown

even more plainly in the coining of inferior metals. Inferior metals, such as copper, very often constitute the first form of money, which is later supplanted by precious metals. Copper and, after the introduction of the gold standard, silver cease to be the measure of value, but the copper and silver coins continue to function as a means of circulation in petty transactions. They now correspond to definite aliquot parts of gold; the value they represent varies in the same ratio as that of gold; it remains unaffected by the fluctuations of the value of silver and copper. It is manifest that under certain circumstances their intrinsic value as metals has no influence upon their function as coins, and that it may be arbitrarily determined by legislation what quantity of gold shall be represented by a silver or copper coin. It needed only a step to substitute a paper token for a metal token, legally to equate a valueless paper chit with a certain quantity of gold.

Thus State paper money arose, which is not to be confused with credit money, which grew out of another function of money.

Paper money may replace gold money only as a means of circulation, not as a measure of value; it can only replace it in so far as it represents certain quantities of gold. Paper money as a means of circulation is subject to the same laws that govern the metallic money into whose place it steps. Paper money can never replace a larger amount of gold than can be absorbed by the circulation of commodities. If the circulation of commodities in a country requires gold amounting to £5,000,000, and the State puts into circulation £10,000,000 in notes, the result would be that I should be able to buy, with two pound notes only as much as with a golden sovereign. In this case, the prices expressed in paper money are twice as high as the gold prices. Paper money is depreciated by its excessive issue.

This took place to a very considerable extent during the world war in all the war-making States, as this method of war finance was more convenient than the imposition of taxes. Eventually, however, the excessive issue of paper money represented nothing less than a particularly brutal form of indirect taxation, as, by continuously throwing fresh quantities of paper money into circulation, the State was constantly forcing up prices, and thereby confiscating for its own benefit a portion of the purchasing power of all income receivers, especially those sections living upon fixed sums of money, such as rentiers, mortgagees and so on, but also the workers and officials, whose incomes exhibit a certain consistency.

At the same time, however, the State destroys its own sources of revenue, as the taxes and duties are paid to it in money that is continuously depreciating. It is therefore never able to cover its expenditure, and is ever and again obliged to resort to the printing press. This can be observed with special distinctness in the States in which the War and the Revolution have administered severe shocks to the national economy.

Most immense was the issue of paper money in Germany. Whereas in the year 1914, the note currency amounted to 2·41 milliards of gold marks, it amounted in January, 1923, to 1280·09 milliards, and in November even to 524,330,557 milliards, to which uncounted milliards of " emergency money " in various kinds must be added. The gold value of these astronomical figures, however, was astonishingly small. It was estimated that all these various kinds of paper money and emergency money together represented a value of 300·3 millions of gold marks, whereas the total value of the various kinds of money (gold, silver, and banknotes) circulating in the year 1913 was valued at 6,070 millions of gold marks. The value of the means of circulation in October, 1923,

therefore, represented only 4·95 per cent. of the corresponding figure in the year 1913.

From these comparative figures two things emerge: firstly, the fact that the velocity of circulation was enormously accelerated, as everybody endeavoured to get rid of the money whose value was melting away in his hands at the earliest possible moment, so that the smaller amount is compensated for by accelerated circulation, and secondly, that there has been a reduction in the quantity of commodities in circulation, which has considerably diminished the total price of these commodities, reckoned in gold.

The total value of the means of circulation considerably increased immediately the stabilisation of the value of money diminished the velocity of circulation and increased the economic activity, thereby raising the total prices of the commodities in circulation. On the 30th November, 1923, the total means of circulation amounted to 1584·7 millions of gold marks, equal to 26·11 per cent. of the figure for the year 1913, for the 31st December, 1923, the corresponding figures were 2273·6 millions of gold marks and 37·48 per cent.

Compared with this measure of inflation, all the figures from other countries, even from Russia, Poland, and Austria, and from all other periods, such as from the Great French Revolution, seem insignificant; at that time 45,581 millions of francs of so-called "Assignats" were in circulation during seven years (1790 to March, 1797).

The great fluctuations in the value of paper money, which in particularly severe cases lead to its total devaluation and its replacement by a stable foreign currency, seem to render it inexpedient for the State to issue paper money. Almost always after currency catastrophes of this kind, the State is legally prohibited from issuing paper money. In view, however, of the reluctance to forego the

economies which the circulation of paper money offers in comparison with the pure gold currency, the issue of paper currency is transferred to a bank infested with special privileges and duties. The most important provision among all the statutes of these banks is the obligation at any time to redeem the money tokens issued by them for gold. This redemption obligation distinguishes the banknote from State paper money, and places it on an equal footing with credit money.

(5) *Additional Functions of Money.*

We have followed the spread of simple commodity circulation, and seen how it is accompanied by an increase in the functions of money as a measure of value and means of circulation. But money is not limited to these functions.

In the course of the circulation of commodities both the necessity and the desire arise to retain and hoard the money commodity, gold. The peculiarities of money correspond to the peculiarities of commodity production: just as the latter is a system wherein social production is carried on by independent private producers, so money is a social power. It is not, however, a power exercised by society, but may be the private property of any individual. The larger the amount of money in a person's pockets, the greater the social power, the goods and enjoyments, the products of the labour of others, at his command. Gold can do everything. It is the sole commodity which everybody wants and everybody will take. Thus the greed for gold grew and grows with the circulation of commodities.

But in the course of the development of commodity production the accumulation of gold becomes not only a passion, but also a necessity. The more products become commodities, the less a producer creates goods for his own consumption, the more necessary is the possession of

money to enable him to live at all. I must buy continually, and I must first of all have sold, in order to be able to buy; but the production of the commodities which I sell requires time, and their sale depends on chance. In order to keep commodity production in full swing, in order to be able to live during the work of producing, I must possess a supply of money. A deposit of money is also necessary to relieve congestions in circulation. We have seen above that the quantity of the circulating money is dependent upon the prices of commodities, their quantity, and the velocity of their movements. Each of these factors is continually changing, and consequently the amount of circulating money is in a state of constant fluctuation. Whence comes the money that is required, and whither goes the money that becomes superfluous?

Hoards of money which accumulate in the most diverse places form conduits which serve now to absorb, now to release money, thus neutralising disturbances in the process of circulation.

In the beginnings of commodity circulation two commodities are always directly exchanged, as in the case of barter, but with this difference, that now one of the commodities is always the general equivalent, the money commodity. With the development of commodity circulation, however, conditions arise by virtue of which the alienation of a commodity becomes separated in point of time from the receipt of the sum of money corresponding to its price. Circumstances now arise which cause a commodity to be paid for before it is received, or, which is oftener the case, to be paid for later. An example may be given to elucidate this point.

Let us take the case of an Italian silk weaver of about the thirteenth century. He obtains the silk which he weaves in his neighbourhood. But the woven product is

destined for Germany, and three to four months must elapse before it can arrive at the place where it is to be sold, and before the purchase money can be received in Italy. The silk weaver has finished a piece of silk goods at the same time as his neighbour, the silk spinner, has spun a certain quantity of silk. The silk spinner apparently sells his commodity to the silk weaver, but the latter does not receive the proceeds of *his* sale until four months later. What happens? The weaver buys the silk, but does not pay for it until four months have elapsed. Buyer and seller now appear in another light. The seller becomes a creditor, the buyer a debtor. Money also is now invested with a new function. In the present case it does not effect the circulation of the commodity; it brings the movement to a close as an independent factor.

In this function it is not a means of circulation, but a means of payment, a means of fulfilling an obligation to supply a certain quantity of values.

Such an obligation does not necessarily arise from the process of the circulation of commodities. The more commodity production develops, the greater are the efforts to convert supplies of particular use-values into a supply of money, the form of general money. Dues in kind to the State are converted into money taxes, and dues in kind to officials into money salaries. The function of money as a means of payment now extends beyond the circulation of commodities.

Let us return to our silk weaver. He buys silk from the silk spinner without being able immediately to pay for it. But there is no sentiment in money matters. The silk spinner reflects: What one has in black and white may be safely taken home. He therefore obtains from the silk weaver a document, in which the latter promises to pay a sum of money corresponding to the price of the purchased silk after four months. But the silk spinner, on

his side, has payments to meet before the four months have elapsed. As he does not possess cash, he pays with the document of the silk weaver. Therefore this document now functions as money; a new kind of paper money comes into existence: credit money (Bills of Exchange, Cheques, etc.).

Yet another case may arise: The silk weaver bought silk to the amount of 25*s*. from the silk spinner, but the latter bought from the goldsmith a bangle costing 30*s*. for his wife. At the same time the goldsmith received from the silk weaver articles of silk to the value of 20*s*. The payments fall due simultaneously. All three, the spinner, the weaver, and the goldsmith, meet together. The first has to pay the last 30*s*., and at the same time to demand 25*s*. from the silk weaver. He pays the goldsmith 5*s*., and refers him to the silk weaver for the rest. The latter, however, has 20*s*. to receive from the goldsmith; consequently he pays him only 5*s*. Thus by means of mutual adjustment, three payments amounting in all to 75*s*. are effected with no more than 10*s*.

Of course, transactions are not effected in reality with the simplicity shown in our example. As a matter of fact, the payments of commodity sellers partly adjust themselves, and indeed to an ever-increasing extent with the development of the circulation of commodities. The concentration of payments at a few places and at definite times create proper institutions and methods for this adjustment, for example, the *virements* in medieval Lyons. The clearing houses which serve the same purpose are well known.

It is only payments which do not adjust each other that have to be made in cash.

The credit system causes hoarding as an independent form of enrichment to disappear. He who wants to retain his wealth need no longer hide his money in the earth or

in cases and trunks, once the credit system has developed. He can lend out his money. On the other hand, the credit system necessitates temporary hoarding, the accumulation of sums of money, which serve to pay debts falling due on settlement day.

But it is not always possible to accumulate such a hoard. Let us recall our weaver. He promised to pay after four months because he hoped to have sold his commodities in the meantime. But suppose that he finds no buyers for his commodities, and therefore cannot pay. The silk spinner is counting on the payment, and in reliance thereon he has likewise contracted to make certain payments, perhaps to the goldsmith, and again the latter to another. We see that the incapacity to pay of one involves the incapacity to pay of others, and all this in a greater degree, the more the system of successive and simultaneous payments and their adjustment is developed. Let us now suppose that not one, but several producers are unable to sell their commodities owing to general over-production. Their incapacity to pay involves the incapacity to pay of others who have already sold their commodities. The promises to pay become valueless, as everybody is demanding cash, the general equivalent. A general shortage of money, a money crisis, arises, which at a certain stage in the development of credit becomes the inevitable accompaniment of every production and commercial crisis.

It shows most distinctly that under the system of commodity production money cannot be replaced by mere commodity certificates.

Money has two spheres of circulation: the internal market of the community State in question, and the world market. It is only inside a country that money assumes the form of coins and value tokens, not in the intercourse of one country with another. On the world market, it

re-assumes its original shape as bars of precious metal, gold and silver. Hitherto both have served in the world market as a measure of value, whilst in the sphere of internal circulation only one commodity can really function as the measure of value.

Moreover, it may be said that since Marx wrote "Capital," gold has shown an unmistakable tendency to become the sole money commodity, even in the world market.

The chief function of universal money is to serve as a means of payment, for the adjustment of international balances.

Further, payments from one country to another take place in consequence of excesses or deficits of imports as compared with exports of commodities, as well as in consequence of payments or revenue in the form of interest on and redemption of foreign loans, of emigration remittances, freight, bank and commercial expenses in international traffic (thus almost every country pays England large annual sums for the transport of their commodities in English ships and for the transaction of banking and commercial business by London banks and so on).

CHAPTER III

THE CONVERSION OF MONEY INTO CAPITAL

(1) *What is Capital?*

In the second chapter we have traced the development of the circulation of commodities from the exchange of products.

Let us now take a step further. Under the simple circulation of commodities, the commodity owner sells his commodities, in order to purchase others. But in the course of time a new form of movement emerges from this form of the circulation of commodities: to buy in order to sell. As we know, the formula of simple commodity circulation is Commodity—Money—Commodity; the formula of the new form of circulation is Money—Commodity—Money.

Let us compare the two formulæ.

The movement Commodity—Money—Commodity has consumption for its object. I sell a commodity, which is a non-use-value for me, in order to be able to obtain others which represent use-values for me. The movement Commodity—Money—Commodity is complete in itself. The money which is the proceeds of the sale is transformed into a commodity which is consumed, and thus falls out of circulation. The money itself is spent once for all, and in its course gets farther and farther away from its former owner. The commodity with which the circuit closed is equal in value to that with which the circuit began, that is, under normal conditions of simple

commodity circulation, and only such can be discussed at this stage.

It is otherwise with the movement Money—Commodity—Money. The purpose of this is not consumption, and its final point is not a commodity, but money. The money thrown into circulation at its beginning is not spent, but merely advanced. It returns to its original owner. The movement is not one that is complete in itself; it keeps repeating itself. The money which was advanced returns, in order again to be thrown into circulation and to return. The movement of money which is set in motion by the circuit Money—Commodity—Money is illimitable.

What, however, is the driving-force of this movement? The motive of the circuit Commodity—Money—Commodity is clear; on the other hand, does not the circuit Money—Commodity—Money appear senseless? If I sell a Bible, in order to buy bread with the proceeds, the commodity at the end of the movement is different from that at the beginning, although of the same value. The one stills my spiritual hunger, but it avails me very little if this hunger is stilled, even if I know the Bible by heart, unless I possess the means of satisfying my material hunger. If, however, I buy potatoes for 100*s*., in order to sell them for 100*s*., I am no farther advanced at the end than I was at the beginning; the whole procedure has neither object nor advantage. There would only be an advantage if the sum of money at the end of the transaction were different from that at the beginning. But one sum of money is distinguished from another only by its magnitude. The movement Money—Commodity—Money has a purpose then only if the sum of money with which it ends is larger than that with which it began. And this increase in the sum of money is in fact the driving motive of the movement. Whoever buys in order to sell, buys in order to sell dearer. The movement Money—Commodity

—Money proceeds no more than normally if the sum of money at the end is larger than that at its beginning. On the other hand, the movement Commodity—Money—Commodity only proceeds normally, as we know, if the value of the commodity with which it closes is equal to that of the commodity with which it begins.

Every purchase is a sale, and *vice versâ*. The movement Money—Commodity—Money seems therefore to run on the same lines as the movement Commodity—Money—Commodity. But we can already see that the two movements are essentially different.

To keep to our example. If I buy potatoes for 100*s*. in order to sell them again, I do so with the object of selling them dearer, perhaps for 110*s*., that is 100*s*. plus 10*s*., or a sum equivalent to the sum laid out, plus an increment. If we denote the commodity by C, the original sum of money by M, the increment by m, we may represent the complete formula in the following manner :—

$$M - C - (M + m).$$

This m, the increment value, which emerges over and above the originally advanced value at the end of this movement, is called by Marx surplus-value. It is not to be confused with its phenomenal forms, profit, interest, etc., any more than value is to be confused with price. So far our exposition has only been concerned with the foundations, not the phenomenal forms, of the economic categories. This is said to avoid misunderstandings.

Surplus value forms the determining peculiarity of the movement $M - C - (M + m)$. The value which runs through the form of the circuit is invested by the surplus-value with a new character, it becomes capital.

In this movement consists the essence of capital. It is value that breeds surplus-value. Those who ignore this movement and try to conceive of capital as an inert thing

will constantly involve themselves in contradictions. Hence the confusion in the orthodox text-books concerning the idea of capital, and the question as to which things should be regarded as capital. Some define it as tools, which implies that there were capitalists in the Stone Age. Even the ape which cracks nuts with a stone is a capitalist; likewise the tramp's stick with which he knocks fruit off a tree becomes capital, and the tramp himself a capitalist. Others define capital as stored-up labour, according to which marmots and ants would enjoy the honour of figuring as colleagues of Rothschild, Bleichroeder, and Krupp. Some economists have even reckoned as capital everything which promotes labour and renders it productive, the State, man's knowledge, and his soul.

It is obvious that such general definitions only lead to commonplaces which are quite elevating to read about in children's fables, but which do not in the least advance our knowledge of human social forms, their laws and driving-forces. Marx was the first to banish completely from political economy the commonplaces which, prior to him, had reigned almost absolutely in many of its provinces. This applies especially to the branch which purported to describe the peculiarities of capital.

We have seen that capital is value that breeds surplus-value, and its general formula is: $M - C - (M + m)$. The implication of this is that the money form is the form in which every new sum of capital begins its movement. The facts support this assumption. It is also apparent from this formula that the movement which it represents necessarily determines the conversion of capital from the money-form into the variegated forms of the commodity world, as well as the re-conversion of these forms into money.

We discern further from this formula that not every sum of money, and not every commodity are capital, and

that they only become capital if they execute a certain movement. But this movement is dependent, for its part, upon certain historical conditions, with which we shall become acquainted. The money that I spend in order to buy an article of consumption, bread or a coat, for myself no more functions as capital than the commodity which I myself have produced and sell functions as capital in this transaction.

Means of production, accumulated labour, etc., certainly constitute the material of capital, but only under certain circumstances. In so far as the latter are ignored, the peculiarities of the modern mode of production are lost sight of and a dark cloak is spread over it, whence it comes about that all the learned and unlearned representatives of capitalism refuse to be taught either by the Marxian theory of capital, or the theory of value on which it is based.

(2) *The Source of Surplus-value*

We now know the general formula of capital : M — C — (M + m). We do not yet know the origin of m, the surplus-value. The given formula seems to indicate that the act of buying and selling creates the surplus-value, and that consequently the latter springs from the circulation of commodities. This is the current opinion. It is, however, based on a confusion of commodity-value with use-value. This is especially true of the assertion that both parties gain in an exchange, because each gives what he does not need and receives what he needs. This may be expressed : "I give away something which possesses little value for me, and receive therefore something which possesses more value for me." This view of the origin of surplus-value is only possible where ideas about value are still nebulous. In order to adhere to this view, it is necessary, on the one hand, to forget that, whilst the

exchange of commodities is based on the unlikeness of their use-values, it is also based on the equality of their commodity-values. On the other hand, one must be as complaisant as are most of the readers of the vulgar economists and accept all their stories at their face value, really believing that the business operations of a modern merchant, for instance, stand on the same level as barter amongst savages.

We know, however, that a surplus-value originates not at the stage of barter, but at that of commodity circulation, which is effected by money, and that the surplus-value appears in the form of money. "Profit," in the sense of obtaining something which has use-value for me in exchange for something which has no use-value for me, is quite irrelevant to a transaction which is expressed by the formula: $M - C - (M + m)$.

Here we encounter a manœuvre of vulgar economy, to which the latter is fond of resorting in order to impede the recognition of modern economic conditions, which is its chief task. It relegates the modern phenomena of production in a remote period of time.

We have to do here not with barter, but with the circulation of commodities. Under normal circumstances, the latter no more than the former can produce surplus-value, if equal commodity-values are always given for equal commodity-values.

Let us assume that the laws of commodity circulation are violated. This would, for example, confer on commodity owners the privilege of selling their commodities at a price increment of 10 per cent. above their original value. The tailor sells his coat for 33s. instead of 30*s*. But to his chagrin, he finds that the cask of wine which he used to buy for 30*s*. will now cost him 33*s*. He has therefore gained nothing.

We might still make an attempt to explain the origin

of surplus-value by the fact that not all, but a number of commodity-owners have discovered how to buy commodities below their value and to sell them above their value. For 90*s*. a merchant buys from a farmer 4 tons of potatoes which are worth 100*s*., and sells them to the tailor for 110*s*. At the end of the process the merchant finds in his hands a larger value than was there at the beginning. But the sum total of existing values remains the same. At the beginning we had values of 100*s*. (the farmer) plus 90*s*. (the merchant) plus 110*s*. (the tailor) = 300*s*. At the end 90*s*. (the farmer) plus 110*s*. (the merchant) plus 100*s*. (the tailor) = 300*s*.

The greater value in the hands of the merchant is therefore not derived from an increase in values, but from a diminution in the values in the hands of the others. If I call this greater value surplus-value, I might as well call surplus value the value which a thief steals from the pockets of another.

The historical beginning of the appropriation of surplus-value, at any rate, occurred in this manner, in the appropriation of alien values, either by means of the circulation of commodities through merchant's capital, or quite openly without this intervention, by means of usurer's capital. But these two types of capital were only possible by violating the laws of commodity circulation, by a manifest and brutal violation of its basic law, that values are only exchanged for equal values. So long as capital assumed the form of merchant's or usurer's capital, it occupied a position of antagonism to the economic organisation of its time, and was also in conflict with contemporary moral conceptions. In Antiquity and likewise in the Middle Ages, trade and especially usury were in bad repute ; they were denounced by the ancient heathen philosophers as well as by the Fathers of the Church ; by Popes and by Reformers.

If we wanted to indicate a type of marsupial we should not put forward the egg-laying duckbill. Similarly, if we want to understand the capital which determines the economic structure of modern society, we should not start out from its, so to speak, antediluvian forms, usurer's and merchant's capital. It was not until another and higher type of capital was formed that intermediate types arose which bring the functions of merchant's capital and interest-bearing capital into harmony with the laws of the prevailing mode of commodity production. Henceforth capital ceased to wear the character of simple extortion and direct robbery. Merchant's capital and usurer's capital can only be comprehended after the basic form of modern capital has been investigated.

It is therefore understandable why Marx excluded merchant's capital and interest-bearing capital from the first two volumes of " Capital " ; these books are devoted to an analysis of the basic laws of capital.

Consequently, we need not concern ourselves any further with the two first-mentioned forms of capital. What is to be remembered as the result of our investigation is the fact that surplus-value cannot arise from the circulation of commodities. Neither buying nor selling creates surplus-value.

But, on the other hand, surplus-value cannot arise outside the sphere of circulation. A commodity-owner may transform a commodity through his labour and thus add new value to it, which is determined by the measure of the socially-necessary labour which would have to be expended, but the value of the original commodity is not thereby augmented ; no surplus-value adheres to the latter through this process. If a silk weaver buys silk to the value of 100*s.* and works it up into silk material, the value of this material will be equal to the value of the silk, increased by the value which the labour of the weaver has

created. The value of the silk as such is not augmented by this labour.

Thus we are faced with a peculiar enigma: surplus-value is not created by the circulation of commodities. It is not created outside the sphere of circulation.

(3) *Labour Power as a Commodity*

Let us consider the general formula of capital more closely. It runs: $M - C - (M + m)$. It consists of two acts: $M - C$, purchase of commodity, $C - (M + m)$, sale. According to the laws of the circulation of commodities, the value of M must be equal to C, and C equal to $M + m$. This is only possible if C itself is increased, if C happens to be a commodity which creates during its consumption a greater value than it itself possesses. The enigma of surplus-value is solved as soon as we find a commodity whose use-value possess the peculiar property of being a source of value, whose consumption is the creation of value, so that in relation to it the formula $M - C - (M + m)$ reads $M - C \ldots (C + c) = (M+m)$.

Now we know that commodity values are only created by labour. The above formula can therefore only be realised if labour-power is a commodity.

"Under the name of labour-power," says Marx, "we include the entire collection of those physical and intellectual faculties which dwell in the human frame and constitute the living personality, and some of which the individual puts into operation whenever he produces any kind of use-value."

Labour-power has to appear in the market as a commodity. What does this mean? We have seen above that the exchange of commodities is based on the absolute right of commodity owners to dispose of their commodities. The owner of labour-power, the worker, must therefore be a free man, if his labour-power is to become a

commodity. His labour-power must remain a commodity; consequently he must not sell it outright, but only for definite periods, else he would become a slave, and be transformed from a commodity owner into a commodity.

Yet another condition must be complied with before labour-power can become a commodity. We have seen that, in order to become a commodity, a use-value must be a non-use-value for its owner. Labour-power must also be a non-use-value for the worker, if it is to appear in the market as a commodity. The use-value of labour-power consists, however, in the creation of other use-values; this process presupposes access to the necessary means of production. If the worker has access to the means of production, he does not sell his labour-power, but employs it himself, and sells his products. If labour-power is to become a commodity, the workers must be divorced from the means of production, above all, from the most important of them, the land.

The worker must be free in every respect, free from any personal dependence, but also bereft of all the necessary means of production. These conditions must exist before the money owner can transform his money into capital. They are not provided by Nature, nor do they characterise all social forms. They are the result of a protracted historical development, and it is only comparatively lately that they have assumed such dimensions as to exercise a decisive influence upon the formation of society. The modern story of capital begins with the sixteenth century.

Now we know the commodity which creates surplus-value. What is the extent of its own value?

Its value is determined like that of any other commodity by the labour-time socially necessary for its production, and therefore for its re-production.

Labour-power presupposes the existence of the worker. The existence, on its part, needs a certain quantity of the means of life for its maintenance. The labour-time necessary for the production of labour-power is therefore equal to the labour-time which is socially necessary to produce this particular quantity of the means of life. A series of circumstances determines the magnitude of this quantity. The more labour-power the worker expends, the longer and more intensively he works, the more of the means of life he requires in order to replace the energy expended, and to be able to work on the next day in the same way. On the other hand, the needs of the working classes of various countries differ according to the natural and cultural peculiarities of every country. A Norwegian worker requires a larger quantity of the means of life than an Indian; the nourishment, clothing, dwelling, firing, etc., which the former requires to be able to exist necessitates a longer labour-time for their production than the means of life of the Indian worker. Further, in a country where the workers run about barefooted, for example, or read nothing, their needs will be slighter than in those countries where boots are worn and books and newspapers read, even when climatic or other natural differences are absent. "In contrast to other commodities," says Marx, "a historical and moral element enters into the determination of the value of labour-power."

Moreover, as everybody knows, the worker is mortal. Capital, however, aspires to be immortal. For this it is necessary that the working class should be immortal, that the worker should propagate his species. The quantity of the means of life necessary for the maintenance of labour-power therefore includes the means of life necessary for the maintenance of the workers' children and under certain circumstances their wives.

Finally, in the production costs of labour-power are also

to be reckoned its educational expenses, the expenses incurred in acquiring a certain dexterity in a particular branch of labour. For the majority of workers these expenses constitute a diminishing quantity.

As a result of all these factors, the value of the labour-power of a particular working class in a particular country and at a particular period is of a particular magnitude.

So far we have not dealt with price, but with value; not with profit, but with surplus-value. Therefore it must be borne in mind here that we are dealing with the value of labour-power, not with wages.

Reference must now be made to a peculiarity which marks the payment for labour-power. In the view of vulgar economy, the capitalist advances wages to the worker, because in most cases the capitalist pays the worker before he has sold the products of the latter's labour. In reality, it is the worker who credits the capitalist with the work he has performed.

Let us assume that I buy potatoes in order to distil whisky from them. I pay for the potatoes after I have distilled the whisky, but before I have sold it. Would it not sound absurd if I should assert that I advanced to the farmer the price of his potatoes because I paid for them before I had sold the whisky? No, it is rather the farmer who credits me with the price of his potatoes until I have distilled whisky from them. If I say that I pay cash, I only mean that I pay for the commodity as soon as I buy it. Merchants would be very much astonished at the economic wisdom which asserted that those who only pay for their commodities after they have used them not only pay cash, but even pay in advance. But the vulgar economists do not hesitate to parade nonsense of this kind before the workers. If the workers sold their commodity labour-power for cash, they would have to be paid the moment this commodity passed into the hands of the

capitalist, and therefore at the beginning, and not at the end, of each week. Under the prevailing system of payment, the workers not only risk their wages, but are also obliged to live upon credit, and therefore have to endure without protest all the adulterations of the means of life practised by the traders. The longer the period of wage payment, the worse the workers fare. A fortnightly or a monthly payment of wages is one of the most oppressive burdens for the wage-workers.

Whatever may be the system of paying wages, the worker and the capitalist always confront each other, under normal conditions, as two commodity owners who mutually exchange equal values. Capital now operates no longer in contradiction to the laws of commodity circulation, but on the basis of these laws. Worker and capitalist confront each other as commodity owners and therefore as free and equal persons, personally independent of each other ; as such they belong to the same class, they are brothers. Worker and capitalist exchange equal values with each other ; the empire of justice, of freedom, of equality and brotherhood, the thousand years kingdom of happiness and peace, seems therefore to have dawned with the advent of the wage system. The misery of servitude and of tyranny, of exploitation and of club-law, now lies behind us.

So we are told by the representatives of the interests of capital.

Part II

SURPLUS-VALUE

CHAPTER I

THE PROCESS OF PRODUCTION

In the first part of this book we have spent most of our time in the commodity-market; we have seen how commodities are exchanged, bought and sold; how money performs the most various functions, how money turns into capital as soon as it finds the commodity labour-power in the market.

Having bought labour-power, the capitalist withdraws with his new acquisition from the market, where it cannot be of any use to him, and repairs to the spot where he can consume, or employ, it, to the workplace. Let us follow him thither. Let us leave the sphere of commodity-circulation and take a turn in the sphere of production.

"Labour-power in use is labour itself." The capitalist consumes the labour-power which he buys by setting its owner to work for him, to produce commodities.

As we have already seen in the first part, the commodity-producing labour has two sides; it is a creator of use-values and of commodity-values. As creator of use-values, labour is not a special peculiarity of commodity production, but a constant necessity for the human race, independent of any particular social form. The labour process comprises three factors: (1) the conscious and

deliberate activity of man, (2) the subject of work, and (3) its instruments.

Labour is a conscious and deliberate activity of man, an operation performed by man upon natural materials, in order to give them a form useful for his needs. The elements of such activity may be detected in the animal kingdom, but it is only when the human race has reached a certain stage of development that it completely loses its instinctive character and becomes a conscious activity. Work is not merely muscular exertion, but also the expenditure of brain and nerve. Marx most aptly observes :

" Besides the exertion of the bodily organs, the process demands that, during the whole operation, the workman's will be steadily in consonance with his purpose. This means close attention. The less he is attracted by the nature of the work, and the mode in which it is carried on, and the less, therefore, he enjoys it as something which gives play to his bodily and mental powers, the more close his attention is forced to be."

The worker works on an object, which is the subject of his work ; in this activity he employs accessories, things whose mechanical, physical, or chemical properties he directs to influence the subject of work according to his purposes. The result of the preparation of the subject of work with the help of the instruments of labour, is the product. The instruments of labour and the subject of work are the means of production.

In making a table a carpenter uses up wood. If the subject of work is not provided by Nature, like a tree in the primeval forest, for example, but has required the expenditure of labour, such as the labour of felling and transporting the wood, then it is called raw material.

In our example wood is raw material, and likewise the glue, the paint, and the varnish which are used in making the table. Wood is the prime material, glue, paint, and

varnish are accessories. Plane and saw, etc., on the other hand, are the instruments of labour, and the table is the product.

"Whether a use-value appears as raw material, as the means of labour, or as a product, depends entirely upon its function in the labour process, and upon the place which it occupies; and its change of place changes its condition."

A head of cattle, kine for example, may successively function as product (cattle rearing), instrument of labour (draught cattle), and as raw material (in fattening).

The instruments of labour are extremely important for the development of the human race. The method of producing depends in the first place upon them, but to the social conditions under every mode of production there corresponds a juridical, religious, philosophical, and artistic superstructure.

Under every mode of production the means of production (the subject of work and its instruments) and labour-power form the necessary elements in the production of use-values, that is of the labour-process. The social character of this process differs, however, with the varying modes of production. Let us now investigate the shape it assumes under the capitalist mode of production.

To the producer of commodities the production of use-values is only a means to the end of the production of commodity-values. As a commodity is a synthesis of use-value and value, he cannot produce values unless he produces use-values. The commodities which he creates must satisfy a need, must have a use for somebody, else he cannot sell them. The circumstance that his commodity must be a use-value is, however, only a necessary evil for the commodity producer, and not the object of his social activity.

Consequently the production-process of commodity pro-

duction is at the same time the process of the production of use-values and commodity-values; it is a combination of the labour-process and of the value-forming process.

This applies to commodity production generally. We have now, however, to examine a special type of commodity production in the production-process: the production of commodities by means of purchased labour-power for the purpose of obtaining surplus-value.

What form does the labour-process there assume?

It does not undergo any immediate alteration of an essential nature through the intervention of the capitalist.

Let us take, for example, a weaver working for himself. His loom belongs to him; he buys the yarn himself; he can work when and how he likes; the product of his labour is his own property. But he becomes impoverished and is obliged to sell his loom. How shall he now live? There is nothing left for him but to hire himself out to a capitalist and to spin for him. The latter buys his labour-power, and also buys the loom and the necessary yarn, setting the weaver to work-up the purchased yarn at his (the capitalist's) loom. Perhaps the loom which the capitalist bought is the same that the weaver had been obliged to dispose of in his need. Even if this is not the case, the weaver works in the same manner as before, the labour-process has undergone no essential change.

Nevertheless two important changes have taken place. The weaver no longer works for himself, but for the capitalist; the latter now controls the worker's labour, and takes care that he does not work too negligently or too slowly, etc. And the worker no longer owns the product of his labour, which belongs to the capitalist.

These are the immediate effects produced in the labour-process as soon as capital is master of the process of production. What shape does the value-forming process now assume?

First of all let us calculate the amount of the value of the product which is produced for the capitalist as a commodity by purchased labour-power with purchased means of production.

Let us suppose that the capitalist buys the labour-power for one day. The means of life necessary for the worker's maintenance are produced in six hours of socially-necessary labour time. Such an amount of labour-time is embodied in 3*s*. The capitalist buys the labour-power at its value; he pays the worker 3*s*. for the working-day.

Now the capitalist holds a supply of cotton yarn for a use-value which is much sought after and can easily be sold. He resolves therefore to produce yarn and purchases the instruments of labour—for simplicity's sake we will consider these to be spindles—and cotton. A pound of cotton may represent two working hours, and would therefore cost 1*s*. A pound of yarn is spun out of a pound of cotton. If one spindle is used up or consumed in the spinning of every 100 lbs. of cotton, 1/100th of a spindle would be consumed in the spinning of 1 lb. Each spindle embodies 20 working hours = 10*s*. In a working-hour 2 lbs. of cotton are spun, and therefore 12 lbs. in 6 hours—always presupposing normal, average, socially-necessary conditions of production.

Under these circumstances how much value would be embodied in a pound of yarn?

First of all the value of the cotton and the spindle consumed in its production. This passes into the product without curtailment or augmentation. The use-value of the cotton and spindle has become something different, their value has remained unaltered. This becomes clear if we regard the various labour processes requisite for the production of the final product as successive parts of one and the same labour process. If we assume that the spinner is also a cotton planter and the cotton is spun

immediately after it is picked, the yarn will appear as the product of planter's and spinner's work, and its value will be measured by the labour-time socially necessary for the growing of the cotton and its working-up into yarn. No alteration is effected in the value of the product if, under otherwise equal conditions, the labour-processes necessary for its production are carried on for the account of different people. The value of the prepared cotton now reappears in the yarn; the same applies to the value of the used-up spindle. We leave accessories out of account for the sake of simplicity.

To this transmitted value is now added the value which the work of spinning imparts to the cotton. In a working-hour 2 lbs. are spun—let us assume that 1*s.* represents 2 working-hours. A working-hour would therefore form a value of 6*d.*

Consequently the value of 1 lb. of yarn is equal to the value of 1 lb. of cotton (= 1*s.*) plus 1/100th of a spindle (= 1·2*d.*) plus ½ working-hour (= 3*d.*), or expressed in shillings $1 + 1/10 + \frac{1}{4} = 1s.\ 4{\cdot}2d.$

According to this, in 6 hours 12 lbs. of yarn are spun of a value of 16*s.* 2·4*d.* But how much has it cost the capitalist to achieve this result? He has been obliged to provide 12 lbs. of cotton = 12*s.*, 12/100ths of a spindle = 1*s.* 2·4*d.* and one unit of labour-power 3*s.*, making in all 16*s.* 2·4*d.*, which is as much as he owns in yarn-value.

So far, therefore, he has worked in vain; so far the purchased commodity labour-power has not created any surplus-value for him.

Nevertheless our capitalist is not disconcerted. He has bought the use-value of the labour-power for the whole day; he has honestly bought it at its full value, and therefore has the right to employ its use-value to the utmost. It does not occur to him to say to the worker: "I have bought your labour-power with a sum of money

which represents 6 working-hours. You have worked 6 working-hours for me; we are quits and you may go." He says rather: "I have bought your labour-power for the whole day, and it belongs to me for the whole day; therefore keep working briskly as long as you can, do not lose a moment of the time which is not your own, but my, time." And he causes him to work perhaps 12 hours instead of 6.

After a further 6 hours, at the end of the working-day, he reckons again. He now possesses 24 lbs. of yarn of a value of 32*s*. 4·8*d*. His expenditure comprises 24 lbs. cotton = 24*s*., 24/100ths of a spindle = 2*s*. 4·8*d*. and 1 unit of labour-power = 3*s*., together 29*s*. 4·8*d*. Pondering he lays down his account book. He has gained 3*s*., or, as it is expressed, "earned" them. He has earned them, acquired surplus-value, without violating the laws of commodity-exchange. The cotton, the spindles, the labour-power, they were all bought at their value. If he has realised surplus-value, it is only by virtue of the fact that he has consumed these purchased commodities, not as means of enjoyment, but as means of production, and that he has consumed the use-value of the labour-power bought by him beyond a certain point.

Under the system of commodity production, the process of production is always a value-forming process; whether it be carried on with hired labour-power or with the producer's own labour-power. It is necessary, however, for the value-forming process to be prolonged beyond a certain point in time in order to create surplus-value. If surplus-value is to be produced, the process of production must last longer than the time necessary to replace the value of the purchased labour-power by newly-created value.

The peasant who tills his own field, or the handicraftsman working on his own account, may also work longer

than the time necessary to replace the means of life which he has consumed. He too can create surplus-value, and his labour may be a value-breeding process. But as soon as the value-breeding process is carried on with alien labour-power, it becomes a capitalist process of production; the latter being necessarily a value-breeding or profit-making process.

CHAPTER II

THE *RÔLE* OF CAPITAL IN THE FORMATION OF VALUE

In the first chapter of Part I we learnt the distinction, first drawn by Marx, involved in the duplex character of the commodity-producing labour: on the one hand as a definite form of useful, use-value-creating labour, and on the other hand as general, human, simple, average labour, which forms commodity-value. In consonance with this duplex character, the production-process under the rule of commodity production is also of a twofold nature, is a combination of labour-process and value-forming process, and as a process of capitalist production, it is a combination of labour-process and value-breeding process. In the last chapter we became acquainted with the two elements of the labour process: means of production and labour-power. We have also become acquainted with the different *rôles* which both of these elements play as parts of capital in the value-breeding process. We have seen that the means of production participate in quite a different manner in the formation of the product-value from the labour-power.

We have found that the value of the means of production that is consumed re-appears in the value of the product. The transference of this value is effected in the labour-process by work. But how is this possible? The labour must perform two things at the same time, create new value and transfer old value. This can only be explained

by the duplex character of labour which we have just referred to. In its capacity as value-forming general human labour, it creates new value; in its capacity as a use-value-forming definite kind of useful labour, it transfers the value of the means of production to the product.

It is only through the special form of spinning labour that the value of cotton and spindle can be transferred to the yarn; the spinner, on the other hand, can create the same value that he creates as a spinner by means of other labour, if he were a carpenter, for instance. Then he would not make yarn or transfer any cotton-value to yarn.

The duplex character of labour as value-forming and value-transferring labour is distinctly shown if we consider the influence of a change in the productivity of labour upon the act of forming value and the act of transferring value. The magnitude of value created in a working hour does not change if, other circumstances being equal, the productivity of labour grows or declines. On the other hand, the quantity of use-values produced in a definite period increases or decreases with the productivity of labour. Therefore, in the same degree, the value-transferring capacity of labour increases or decreases.

For instance, suppose an invention doubles the productivity of spinning labour, while the productivity of the cotton planter's labour remains the same. As 1 lb. of cotton represents 2 working hours, it costs 1*s.*, according to our assumptions in a previous chapter. Formerly, 2 lbs. of cotton were spun in an hour, but now 4 lbs. are spun. The same new value which was previously added to the 2 lbs. by the work of one hour is now added to the 4 lbs., 6*d.* according to our assumption. But the doubled value is now transferred by the spinning labour to the yarn in one hour: previously 2*s.*, now 4*s.*

It is apparent that the value-receiving or transferring

capacity of labour depends upon a different quality of labour from its value-forming capacity.

As no producing is possible without means of production, so every kind of commodity-producing labour is not only value-forming, but also value-receiving, and this not only in the sense that it transfers the values of the used-up means of production to the product, but also in the sense that it has preserved the value of the former from dissolution. All earthly things are perishable, and therefore even the means of production wear out sooner or later, even if they remain unused. Many of them, various machines, for example, wear out even more quickly if they stand still than if they were kept running. With the use-value of the means of production, its commodity-value also disappears.

If the machines are worn out in a normal fashion in the process of production, the value which the means of production lose reappears in the value of the product. If the means of production are worn out without being employed in the production process, then their value disappears utterly.

The capitalist generally overlooks this side of the work, but it obtrudes itself very disagreeably on his consciousness if he is compelled to suspend the production process in consequence of some crisis. Marx quotes the example of an English cotton spinner, who in 1862 estimated the standing expenses of his factory when not working, as a result of the cotton crisis, at £6,000 a year, of which £1,200 went for depreciation of machinery.

The various parts of the means of production function in different ways in transferring value. Some lose their independent shape, such as raw and auxiliary materials. Others retain their shape during the labour process. The cotton that is spun loses its shape, not so, however, the spindle that spins. The former imparts its entire value to

the product in the labour process, the latter only a fraction thereof. If a machine is worth £50 and is worn out, under normal conditions, in 1,000 days, it imparts in every working day the value of 1*s.* to the product that is produced with its assistance.

Here also we are confronted with the duplex character of the production process. How can the machine impart 1/1000th of its value to a specific product ? In its production, it is not 1/1000th of the machine, but the whole of the machine that is in operation. This objection has actually been raised. The answer is that the entire machine enters into the production process so far as it is a labour process ; but only a corresponding fraction thereof so far as it is a value-breeding process. As use-value, the entire machine enters into every production process, as value, only a fraction of it.

Contrariwise, the entire value of an instrument of production may pass into the product, and yet only a portion of its substance. If we assume that, in order to produce 100 lbs. of yarn, 115 lbs. of cotton are required under normal conditions, that the waste in this case amounts to 15 lbs., only 100 lbs. of cotton are really transformed into 100 lbs. of yarn, but in the value of 100 lbs. of yarn, the value of 115 lbs. of cotton will be contained.

During the labour process the means of production transfer as much value to the product as they lose during the same operation. They can never impart more value to it than they possess themselves, however great their use-value may be. It is therefore quite pointless for the vulgar economists to derive the surplus-value and its converted forms, rent, interest, and profit, from the use-value of the means of production, from its " services."

The value of the means of production consumed in the labour process reappears unaltered in the value of the product.

The labour not only receives value; it also forms new value. Up to a certain point in time, the new-value-creating labour only replaces the value expended by the capitalist in the purchase of labour-power.

"That part of capital then," says Marx, "which is represented by the means of production, by the raw material, auxiliary material, and the instruments of labour, does not, in the process of production, undergo any quantitative alteration of value. I therefore call it the constant part of capital or, more shortly, *constant capital.*

"On the other hand, that part of capital, represented by labour-power, does, in the process of production, undergo an alteration of value. It both reproduces the equivalent of its own value, and also produces an excess, a surplus-value, which may itself vary, may be more or less according to circumstances. This part of capital is continually being transformed from a constant into a variable magnitude. I therefore call it the variable part of capital, or, shortly, *variable capital.* The same elements of capital which, from the point of view of the labour-process, present themselves respectively as the objective and subjective factors, as means of production and labour-power, present themselves, from the point of view of creating surplus-value, as constant and variable capital."

The magnitude of value of constant capital is, of course, only to be understood as a constant magnitude in relation to the value-breeding process. The magnitude of value of constant capital is not altered by the production process in which it is employed, although such an alteration may be brought about by other factors. Moreover, the relation between constant and variable capital may change. But we shall return to this later.

CHAPTER III

THE DEGREE OF EXPLOITATION OF LABOUR-POWER

LET us take a capital of, say, £250. The same is divided into two parts, a sum of money which is expended on the purchase of means of production, the constant capital c, which we will put at £205, and another sum of money which serves for the purchase of the necessary labour-power, the variable capital v, which is equal to £45. The constant capital itself is again divided into two parts: raw materials, etc., whose value reappears entirely in the product, and tools, etc., which only impart a portion of their value to the product in every production process. In the following investigation we shall leave this distinction out of account, as its observance would merely complicate the problem without altering anything in the result. For the sake of simplicity, we shall therefore assume here that the value of the whole of the capital employed reappears in the product.

The capitalist has bought means of production and labour-power, and employs them. At the end of the production process, the value of the capital advanced is augmented by the surplus-value s, which amounts to £45. Thus he now owns $c + v + s = £205 + £45 + £45 = £295$. Of this £205 are transferred value, and £45 + £45 newly-created value.

It is clear that the magnitude of value of the constant capital exercises no influence upon the magnitude of the surplus-value produced. Without means of production, nothing can, of course, be produced, and the longer the

time that producing is to be carried on the more means of production are necessary. The production of a certain magnitude of surplus-value is therefore conditioned by the employment of a certain mass of the means of production, which depends upon the technical character of the labour-process. But the extent of the value of this mass has no influence upon the magnitude of the surplus-value.

If I employ 300 workers, and the daily value of each amounts to 3*s.*, whilst the value which each creates in a day amounts to 6*s.*; these workers would create in a day a value of £90, of which £45 would be surplus-value, irrespective of whether the means of production which they utilised had a value of £100 or £200 or £400. The creation of value and the alteration of value are unaffected by the magnitude of value of the constant capital advanced. So far, therefore, as it is a question of merely regarding these two processes, we may leave constant capital out of account, and equate it with *nil.*

Consequently, we are here concerned only with the variable part, *v*, of the capital advanced; as to the value of the product only with the value newly created by labour, which is equal to the value of the variable capital employed, plus the surplus-value, $v + s$. The relation of the surplus-value to the variable capital advanced is in our case —£45 : £45 = 100 per cent.

This relative increase in the value of the variable capital or the relative magnitude of the surplus-value, Marx calls the rate of surplus-value. It should not be confused with the rate of profit, although this is often done. Profit is derived from, but is not identical with, surplus-value.

In order to produce during the working day a value equal to the value of his labour-power, equal to *v*, the worker is obliged to work a certain time; we have previously assumed this to be 6 hours. This labour-time is

necessary for the maintenance of the worker. Marx calls it the necessary labour-time. The portion of the working-day in which the worker works beyond the limits of the necessary labour-time and creates, not value to replace his labour-power, but surplus-value for the capitalist, is called by Marx surplus labour-time, and the labour expended during that time, surplus labour. Surplus-labour stands to necessary labour in the same relation as surplus-value to variable capital; we may express the rate of surplus-value in this wise:

$$\frac{s}{v} \text{ or } \frac{\text{surplus labour.}}{\text{necessary labour.}}$$

Surplus-labour is represented by a quantity of products, which Marx calls surplus-produce. Its relation to variable capital must therefore be expressed in the relation of certain fractions of the product to each other. In contemplating this relation, which concerns not the newly-created value, but the finished product, we cannot, however, as before, leave out of account constant capital, which forms a part of the value of the commodity.

Let us assume that in a working day of 12 hours a worker produces 20 lbs. of yarn of a value of 30*s*. The value of the cotton spun amounts to 20*s*. (20 lbs. at 1*s*.). The wear and tear of the spindle, etc., is 4*s*., the value of the labour-power 3*s*. The rate of surplus-value is 100 per cent. Thus we have yarn-value 30*s*. = 24*s*. (*c*) + 3*s*. (*v*) + 3*s*. (*s*); this yarn-value exists in 20 lbs. of yarn, and consequently the constant capital is contained in 16 lbs., the variable capital in 2 lbs., and the surplus-value in 2 lbs. of yarn.

The 20 lbs. of yarn are produced in 12 hours, and therefore $1\frac{2}{3}$ lbs. of yarn in each hour. The 16 lbs. in which the value of the constant capital is embodied are produced in 9 hours 36 minutes; the 2 lbs. in which the value of the

$\frac{5}{3}$ $\frac{20}{3}$ 6.6

variable capital is contained, in 1 hour 12 minutes, and likewise the 2 lbs. in which the surplus-value is embodied.

By calculating in this fashion, it would seem as if the surplus-value were not created in 6 hours, as supposed, but in 1 hour 12 minutes. And so reckon all the manufacturers, who prove to a nicety that their profit is created in the last working hours, and that if the labour-time should be shortened by only one hour, all profit would be made impossible, and industry would be ruined. In the year 1836, this mode of calculation was urged against any legal restriction of labour-time by the English manufacturers and their learned and unlearned advocates under the leadership of Senior. The same argument was revived in Germany and Austria against the normal working-day, although the actual experience of England had already demonstrated its fallacy. The working-day was legally curtailed, in various branches of labour in England without ruining industry, or even appreciably injuring the profits of the factory lords.

The whole argument is based on confusing use-value with value. The use-value of 2 lbs. of yarn is created in the last hour, but not its value. The 2 lbs. of yarn have not been spun out of the empty air. In the 2 lbs. of yarn is contained not merely the spinner's labour of 1 hour 12 minutes, but also the value of 2 lbs. of raw cotton, and according to our assumption (1 lb. of cotton = 1*s.*, 1*s.* = 2 working hours), 4 working hours are incorporated in 2 lbs. of cotton. Moreover, as much value has been transferred from the spindle, etc., to the 2 lbs. of yarn as would be created in 48 minutes of socially-necessary labour time. Therefore, 6 working hours have in reality been necessary for the production of the 2 lbs. of yarn that have been manufactured during 1 hour 12 minutes. If the worker in our example really created during 1 hour and 12 minutes the whole of the surplus-value, he ought

to be able during a 12-hour working-day to create a value equivalent to 60 working hours! And nonsense of this sort was believed by the manufacturers.

As the argument still carries some weight in certain circles, yet another of its aspects may be elucidated. Let us calculate how high the rate of surplus-value would work out with a shortening of the working-day from 12 to 11 hours, under the conditions already assumed.*

We should then no longer have 24*s.* constant capital, but merely 22*s.*, as less of its constituents would be utilised ($18\frac{1}{3}$ lbs. cotton = 18*s.* 4*d.*; wear and tear of spindle, etc., only 3*s.* 8*d.*), to which must be added a variable capital of 3*s.* (we assume that the wages for 11 hours remain the same as formerly for 12 hours) and a surplus-value of 2*s.* 6*d.* The rate of surplus-value would therefore amount to 82·33 per cent., instead of 100 per cent.

We have a total product of $18\frac{1}{3}$ lbs. yarn with a value of 27*s.* 6*d.*; the constant capital is embodied in $14\frac{2}{3}$ lbs.; the variable in 2 lbs.; the surplus-value in $1\frac{2}{3}$ lbs. The $14\frac{2}{3}$ lbs. are produced in 8 hours 48 minutes; the 2 lbs. yarn in 1 hour 12 minutes; and the mass of yarn which contains the surplus-value in 1 hour. The time for the production of the surplus-produce which contains the surplus-value is therefore diminished, not by one hour, but only by 12 minutes, through the shortening of the labour-time by one hour.

The calculation of the manufacturer is based on the astonishing assumption that whilst one-twelfth less product is produced in 11 hours, as much of the means of production (raw material, etc.) is utilised as during 12 hours.

* In this connection we assume that a shortening of the labour-time from 12 to 11 hours is accomplished by a diminution of 1/12th in the output. In reality this is not necessarily the case; as a rule the shortening of working-time is accompanied by an increase in the strength, skill, endurance, care, and intelligence, in short the labour-capacity of the worker, which sometimes goes so far that the worker produces in the shorter working-time more than formerly in the longer working-time.

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As the argument still carries some weight in certain circles, yet another of its aspects may be elucidated. Let us calculate how high the rate of surplus-value would work out with a shortening of the working-day from 12 to 11 hours, under the conditions already assumed.*

We should then no longer have 24*s.* constant capital, but merely 22*s.*, as less of its constituents would be utilised ($18\frac{1}{3}$ lbs. cotton = 18*s.* 4*d.*; wear and tear of spindle, etc., only 3*s.* 8*d.*), to which must be added a variable capital of 3*s.* (we assume that the wages for 11 hours remain the same as formerly for 12 hours) and a surplus-value of 2*s.* 6*d.* The rate of surplus-value would therefore amount to 82·33 per cent., instead of 100 per cent.

We have a total product of $18\frac{1}{3}$ lbs. yarn with a value of 27*s.* 6*d.*; the constant capital is embodied in $14\frac{2}{3}$ lbs.; the variable in 2 lbs.; the surplus-value in $1\frac{2}{3}$ lbs. The $14\frac{2}{3}$ lbs. are produced in 8 hours 48 minutes; the 2 lbs. yarn in 1 hour 12 minutes; and the mass of yarn which contains the surplus-value in 1 hour. The time for the production of the surplus-produce which contains the surplus-value is therefore diminished, not by one hour, but only by 12 minutes, through the shortening of the labour-time by one hour.

The calculation of the manufacturer is based on the astonishing assumption that whilst one-twelfth less product is produced in 11 hours, as much of the means of production (raw material, etc.) is utilised as during 12 hours.

* In this connection we assume that a shortening of the labour-time from 12 to 11 hours is accomplished by a diminution of 1/12th in the output. In reality this is not necessarily the case; as a rule the shortening of working-time is accompanied by an increase in the strength, skill, endurance, care, and intelligence, in short the labour-capacity of the worker, which sometimes goes so far that the worker produces in the shorter working-time more than formerly in the longer working-time.

CHAPTER IV

SURPLUS-VALUE AND PROFIT

THE same distinction that exists between value and price also obtains between surplus-value and profit. What interests the practical man, the seller and buyer of commodities, is their price. Consequently, he is only interested in the laws of price, because a knowledge of them may be useful to him in his business calculations and speculations. On the other hand, the laws of value which underlie price interest merely the theorist, who is not concerned with buying as cheaply and selling as dearly as possible, but in investigating the social ramifications which arise from commodity production.

Thus it is not surplus-value but profit that interests the practical capitalist. His desire is not to investigate the relation between capital and labour, but to make as large a profit as possible. With what expenditure of labour this profit is created is primarily a matter of supreme indifference to him. It is not his labour that creates it, although it is his money with which it is created. He does not therefore compare the surplus-value that has been gained with the quantity of labour that has been expended in its production, but with the amount of money that he has been obliged to advance. If the movement of the creation of surplus-value is represented by the formula $M - C - (M + m)$, the capitalist measures his profit by the relation of m to M. But this relation is by no means the same as that between v and s, between variable capital and surplus-value. The sum of money which

the capitalist is obliged to advance for production must suffice not merely to pay for the wage-labour, but also for factory buildings, machines, raw and auxiliary materials, in short, for all that Marx comprises in the term " constant capital." As a result of this, the rate of profit may be quite different from the rate of surplus-value even in cases where surplus-value and profit are identical. If the rate of surplus-value is expressed by the formula $v : s$, the rate of profit may be expressed by the formula $(c + v) : s$.

It is to be observed, however, that as regards many branches of production, especially agriculture, the year forms a natural term for production, which begins anew at its close. The custom has therefore grown up of calculating the rate of profit by the relation of the amount of money yielded in one year to the amount of capital advanced for production during the same year.

It is clear from the start that the rate of profit must differ from the rate of surplus-value.

In the preceding chapter we chose the example of a capital of £250, of which £205 was constant capital, £45 variable capital, and £45 surplus-value. The rate of surplus-value was therefore £45 : £45 = 100 per cent. On the other hand, the rate of profit in this case is £250 : £45 = 18 per cent.

But between the rate of surplus-value and that of profit a distinction other than this purely formal one is soon revealed, another method of calculation.

It is obvious that the same rate of surplus-value must yield different rates of profit if the composition of capital is a varying one, if differing amounts of constant capital accompany the same amount of wages. This composition is necessarily different in every branch of production, according to its technical character and the level of the technical development.

" The value-composition of capital, in so far as it is determined

by its technical composition and reflects the latter, we call the organic composition of capital. . . . Consequently we call that capital which contains a higher percentage of constant and therefore a lower percentage of variable capital than the average social capital: capital of a higher composition. Contrariwise, such capital as contains a relatively smaller percentage of constant and a higher percentage of variable capital we call capital of a lower composition. Finally, we call capital of an average composition that capital whose composition coincides with that of the social average capital." ("Capital," III., pp. 124, 142.)

Let us now see how the rate of profit develops under the influence of the various compositions. Let us take three undertakings from three different branches of production. The first is technically backward, and in relation to the number of workers, employs few machines, uses no large factory buildings, etc. The second is an average one, but the third is so highly developed that for every worker a large amount of value in machines and buildings is employed. The organic composition of its capital is a high one.

Making the example as simple as possible, we will assume that in all three branches of production the rate of surplus-value is the same, and the whole of the capital advanced is turned over once a year, that is, it is entirely used up in production during that time, and the product is not sold until the end of the year, when all of it is disposed of. These are assumptions which scarcely transpire in reality, but we are obliged to make them if the example is not to be too complicated and obscure.

In each of the three undertakings 100 workers are employed at a yearly wage of £50 each. The rate of surplus-value amounts everywhere to 100 per cent.; the wage bill is therefore £5,000 and the amount of surplus-value is also £5,000. But the constant capital amounts in undertaking A to £5,000, in undertaking B to £15,000,

and in the third undertaking C to £25,000. Thus we have :

Undertaking.	Capital.			Surplus-value.	Rate of surplus-value.	Rate of profit.
	Variable.	Constant.	Total.			
					per cent.	per cent.
A	£5,000	£5,000	£10,000	£5,000	100	50
B	£5,000	£15,000	£20,000	£5,000	100	25
C	£5,000	£25,000	£30,000	£5,000	100	16·6
Total	£15,000	£45,000	£60,000	£15,000	100	25

With equal rates of surplus-value, the rates of profit will therefore differ considerably, if the commodities are sold at their exact value.

This variation in the rate of profit, however, is a condition which cannot continue under the capitalist mode of production. The capitalist produces only for the sake of profit ; not in order to satisfy some need. What he produces is all the same to him, whether it be knitting needles or locomotives, boot polish or *eau de cologne*. The chief thing is that he pockets the largest possible profit in return for his money. What, therefore, would the consequence be if an undertaking in one branch of business yielded 50 per cent., and in another branch only 17 per cent. ? Capital would avoid the latter so far as it could, and turn with all its strength to the former. Undertaking A would be exposed to strong competition, the production of commodities in this branch would rapidly increase, while it would decline in C.

This brings us to the sphere of competition, of supply and demand. We have already seen that value and price are two different things, although the latter is determined

by the former. Among the causes which produce a deviation of prices from values the most important is a change in the demand of buyers and the supply of sellers.

Under free competition, supply and demand are the regulators of the prevailing mode of production, which otherwise would lapse into utter anarchy, inasmuch as it is not systematically regulated, but carried on by private undertakings, each of which produces according to the estimates of its owner or manager. Supply and demand ensure that the existing quantities of labour-power are distributed among the various branches of production in such wise that each produces on the whole as much as society requires under existing conditions. Of course, this only applies generally, and not to every individual case. The truth is rather that, with the planlessness of the prevailing mode of production, either too much or too little of one or another commodity is being constantly produced, and it is only afterwards, through the operation of supply and demand, which produces a fall or rise in prices, that production is restricted or expanded in accordance with social requirements.

If more of a commodity is produced than the purchasing members of society can or will buy at a certain price level, which in the last resort is determined by its value, then its price falls, as a result of which the circle of those members of society who are able or willing to buy extends. But a fall in profit accompanies a fall in price; if the profit sinks below the average, it frightens away capital from the branch of production in question; production there is diminished, with the result that the price rises again until it reaches the level which corresponds to the average profit.

Contrariwise, if the price rises above this level, because fewer commodities are being produced than would meet the demand of the buyers, then the profit rises also.

Capital is attracted to this branch of production and streams into it, extending production, whereupon prices again fall to the level which yields the average profit. Prices continually fluctuate about this level, sometimes rising above it, sometimes sinking beneath it. It is only through this wave movement that the level is established; it exists only as a tendency, an aspiration, and not as a permanent condition.

This effect of supply and demand would also counteract those inequalities in the rate of profit which arise from the inequality in the organic composition of capital.

In Branch C, production declines, and prices, and consequently profits, rise. In Branch A, production increases and prices fall. Both the one and the other will continue until profits have been equalised and have reached the average level of the totality of the rates of profit. We have assumed that B represents the average organic composition of capital, and its rate of profit is therefore the average rate of profit. The profit in the three undertakings will then work out in the following way :—

Undertaking.	Total capital.	Surplus-value.	Rate of surplus-value.	Rate of profit.	Profit.
A	£10,000	£5,000	100	25	£2,500
B	£20,000	£5,000	100	25	£5,000
C	£30,000	£5,000	100	25	£7,500
Total .	£60,000	£15,000	100	25	£15,000

This equalisation of the rate of profit, however, is only possible by virtue of the fact that commodity prices deviate from commodity values. As we assume that the total capital advanced is turned over in one year and appears in the value of the year's product, we shall now

establish the following relation between the value and the price of the annual product of each undertaking :

Under-taking.	Total capital.	Surplus-value.	Value of the total product (costs of production plus surplus-value).	Profit.	Production price of the total product (costs of production plus profit).
A	£10,000	£5,000	£15,000	£2,500	£12,500
B	£20,000	£5,000	£25,000	£5,000	£25,000
C	£30,000	£5,000	£35,000	£7,500	£37,500
Total .	£60,000	£15,000	£75,000	£15,000	£75,000

If we assume that the annual product of each undertaking comprises 10,000 commodities, this gives us the following figures for each single commodity :—

	A	B	C
Value	30*s.*	50*s.*	70*s.*
Production price . .	25*s.*	50*s.*	75*s.*

In reality the process does not operate in such a manner that each capital immediately secures the full surplus-value, and the capitalists in one branch make a profit of 50 per cent. and those in the other only 17 per cent.

Such distinctions as these only obtain in the beginnings of the capitalist mode of production, or in countries and branches of business which have recently come under the influence of this mode of production. Under conditions of developed capitalist production, a traditional average principle of profit is formed, which capitalists assume as a matter of course in their price calculations, but which, of course, does not prevent them from utilising

every opportunity to exceed this price, although they regard it as a loss if they secure a lower price, and therefore a smaller rate of profit. This price, which is formed from the costs of production (the variable and constant capital expended), to which is added the "current" profit, appears to the capitalist as the "natural" price. Marx calls it the production price. It consists of the cost price (amount of the variable and constant capital) and the average profit.

It is not the value, but the production price which, under a developed capitalist mode of production, forms the level about which the market prices, under the influence of supply and demand, oscillate. The price of production itself, however, does not oscillate *in vacuo*, but is based upon value.

The opponents of the Marxian theory of value are fond of asserting that Marx himself threw overboard his own theory, which he developed in the first volume of "Capital," in the third volume, in which he demonstrates that, in consequence of the tendency towards an equalisation of profits under developed capitalist commodity production, the prices of most commodities permanently deviate from their values, inasmuch as the prices of one-half of these commodities are permanently as much below their values as those of the other half are above them. But Marx would have thrown overboard his theory of value only if he had contended that prices are independent of their values. Far from doing this, the third volume of "Capital" proves rather that production prices, about which market prices oscillate, remain in complete dependence upon the law of value, without which they cannot be explained. It is precisely the factor of the average profit, which causes the deviations of production prices from values, that can only be explained by the laws of surplus-value, which in their turn arise from those of value.

If we do not assume that the entire mass of the surplus-value existing in society is synonymous with the entire mass of profit with its sub-divisions (interest, ground rent, etc., which we shall not discuss further at this place), we abandon every method of explaining why the average rate of profit is a definite magnitude under given conditions.

The law of commodity-value is not invalidated by the emergence, under developed capitalist production, of a new intermediate factor, in the shape of the average rate of profit and the production price dependent therefrom, between value and price. If this fact should invalidate the law, then the law of gravitation would be invalidated because falling bodies encounter more resistance in water than in air.

The Marxian theory of production price is inseparable from its theories of value and surplus-value. Far from reducing the latter to absurdity, it forms their complement. The theory of production price furnishes us with the clue to a series of phenomena upon which is based the relationships of the ruling classes to each other, the antagonism between capital (profit) and landlordism (ground rent), between industrial capital (industrial profit) and money capital (interest), etc. Moreover, it supplies us with the clue to a number of theories of value, and also provides the means for their refutation, for many of these theories are at bottom only theories of production price, which they regard as the ultimate determining factor in market prices.

This may be the proper place to glance at those theories of value which deny the determination of value by labour. It may be said of all these theories that they are not theories of value at all, that they understand by value something which is not value at all: use-value, production price, average price.

It can of course be said that every theorist has the right

to define value as he likes. We have merely to inquire whether his explanation of that which he understands by value is correct or not. It does not matter to us if it is a theory of use-value or of price, or whatever else.

But in every other science a conception of such unscientific simplicity would not be taken seriously. Take, for instance, the atomic theory. What would be said of the notion that every investigator was at liberty to understand by atom what he liked, perhaps a molecule or a cell; that, provided he formulated a correct cellular theory, it was a matter of indifference whether he called it an atomic theory or not? He would at once be told that the question of the atom was not that of a name which could be applied capriciously now to this and now to that thing, but that it was a question of perfectly definite processes, whose explanation has to serve the theory of atoms, processes which, among other things, also underlie the formation of molecules or cells. The atomic theory may be accepted or rejected, that is, the processes in question may be explained by it or otherwise; but it would be a crude scientific blunder to call an atom a product of those processes which, according to the theory, are determined by the pervasion of atoms. The fundamental ought never to be confused with the derivative.

About this no doubt is possible in natural science. The processes of political economy are more complicated; nevertheless what applies to natural science must apply to them. The social relations and processes which are to be explained by the law of value are of a quite definite character, and it will not do to describe and deal with as the law of value the laws of other relations and processes which are determined by value.

The process which every theory of value must aim at explaining is the exchange of two commodities; the social relation which it must aim at explaining is that between

two commodity-owners, who mutually exchange their commodities. The process of commodity-exchange, from which buying and selling develops, is the fundamental process, which maintains the whole activity of present-day society. Consequently, any explanation of this activity must proceed from the investigation of the law which regulates the exchange of commodities, and this in fact is the law of value. If by the law of value is to be understood the explanation of another process, then a particular name must be given to the law which underlies the exchange of commodities. This, however, none of the theories of value does. Each theory therefore aims at explaining the same process.

If, however, the process which the law of value has to explain be kept steadily in view, it will be obvious that above all use-value and exchange-value must be sharply distinguished, and the investigator must not allow himself to be led astray by the little word value which occurs in both designations, so as to regard them as synonymous. Many theories of value explain value from the utility of an article. The more useful, the more valuable. This is correct if by more valuable is understood a greater use-value, but false, if a greater exchange-value is meant.

The use-value, the utility of a thing, describes a relation between the individual, the consumer, and this thing; but not a social relation, a relation between two people, such as the exchange relation is. Perhaps it may be contended that equally useful articles are exchanged with each other in the same quantities. But the exchange or the sale usually consists in the fact that every seller parts with things which have no use-value, no utility, for him.

If the baker and his assistants are fed, the bread which they have baked and sell has no longer any use-value for them. If the baker cannot find any customers for it, he does not know what to do with it. On the other hand

this bread may have the greatest use-value for a worker passing by the baker's shop who has not yet broken his fast. The exchange-value of the bread, however, is the same for both parties.

Suppose the workman passing by is a basket-maker, calling from house to house with his baskets. The baker needs a basket, which has great use-value for him, but none whatever for the workman. The latter has a quantity of baskets lying at home, and no use to put them to. He gladly parts with a basket for some loaves of bread. But in what ratio would basket and bread be exchanged if their owners took their stand on utility? How many loaves of bread are as useful to the workman as the basket is to the baker? It is obvious that the utility of two different use-values cannot be compared at all; they do not admit of a quantitative comparison. If the basket-maker received five loaves of bread for his basket, it would be absurd to say that a basket was five times more useful or (in this sense) more valuable than a loaf of bread. The utilities of different commodities are not commensurable with each other.

In the case of various specimens of the same type of commodity, it is certainly possible to fix a higher or lower degree of their use-value. A durable pair of boots has a greater use-value than a shoddy pair, and I would gladly pay more for them—provided I had the necessary money. A bottle of Johannisberg wine has a greater use-value and exchange-value than a bottle of Spandau or Grueneberg wine. It would therefore seem that use-value is an element in exchange-value.

But it only seems so. If the greater use-value creates the greater exchange-value, the question arises, why does not every producer only produce the best qualities? Why does not every shoemaker manufacture only superior shoes? Why does not every vintner bottle only the best

brands? The answer is simple. In the case of shoes the better quality is either the result of better raw materials, etc., which cost more labour and money, or the result of better work, which means a greater expenditure of labour, assuming an average degree of skill on the part of the worker. For this reason, and not because of the greater use-value, the more solid shoes are dearer. It is a well-known saying that the dearest commodities are the cheapest, that is, their use-value surpasses that of the inferior qualities to a much greater extent than their commodity-value surpasses that of the latter. A pair of boots costing 12*s*. lasts perhaps twice as long as a pair at 10*s*.

The higher price of certain kinds of wines, however, is based on the fact that they can only be bottled at particular places. Here the law of value loses its validity, because we are concerned with a monopoly. The law of value, however, presupposes free competition.

Where differences in price are determined by differences in quality among the same kind of commodities, the latter may always be traced either to differences in the expenditure of labour or to monopoly conditions.

Again, other theories of value confuse value with price. They purpose to explain value from the relation of supply and demand. But they only explain why the prices of a certain commodity continuously oscillate about its value (its production price); they do not, however, explain why the average price of one commodity continuously remains so much higher than that of others; why, for instance, a pound of gold was for centuries thirteen times as dear as silver.

If the explanation of value through supply and demand is to make this permanent difference in the prices of different commodities intelligible, there is no alternative but to have recourse to the labour theory of value. To

the question as to why one commodity is constantly so much dearer than another, it answers that this is due to its greater scarcity, which causes the supply of it to be permanently less than that of the other.

In order, however, to place on the market as much of a commodity that is scarce as of one that is plentiful, more labour is required. If I say that a pound of gold was thirteen times as dear as a pound of silver, because it was found thirteen times more seldom, or because it cost thirteen times as much labour to produce a pound of gold as a pound of silver, it comes to the same thing. As soon as the theorist steps down from the standpoint of the business man, who is merely interested in the price of commodities in the market, and not in the manner in which they are obtained; as soon as he investigates matters more closely and considers how commodities are produced, then he always finds that the value of commodities is determined by the process of production, and is created in the work-place and not in the market. Of course, the bourgeois theorists are generally fonder of the market than of the factory, and as a rule they entirely fail to comprehend the labour theory of value.

In the market value is merely transformed into money, into price; first of all into imaginary money, the price demand, and then into real money, when the commodity is sold. The more capitalist economy develops, the more intermediate factors are interposed between the work-place and the market, between the producers and the sellers to the consumers, the greater may be the deviations thereby brought about of the actually realised price from the theoretically determined value. But all the same, in the last resort it is always the conditions of production which determine the value of commodities, and from which their prices remain dependent, however contingent the nature of this dependence may be.

The practical capitalists themselves determine the value of commodities by reference to their conditions of production. They do not, of course, understand by these conditions the labour-time socially necessary for the production of the commodities in question, but the production costs (wages, outlay for machines, raw materials, etc.) plus the average profit.

Accordingly, a whole school of theorists attempt to explain that value is determined by costs of production.

But what is correct from the standpoint of the practical capitalists is absurd from the standpoint of theory, which does not have to calculate the normal price at a given time, but has to trace the social processes of the capitalist mode of production to their final causes.

Above all: what are the costs of production? A definite sum of money. Consequently they pre-suppose the existence of money. The determination of value by production means, therefore, that value is to be explained by money, and not *vice versâ*. The cart is being put before the horse.

The costs of production are a definite sum of values—the value of the labour-power (wages), the value of the means of production, the value of the profit. Value is explained from this sum of values. It is obvious that this determination of value revolves in a circle.

Let us now take a commodity producer, some peasant weaver, who we will assume produces everything himself. He raises his food, as well as the raw material, the flax, which his daughter spins, and he makes the loom himself from his own wood; in what consist this man's costs of production? He has laid out no money; his product merely costs him labour, nothing but labour.

Now let us proceed a step farther to a higher level of production, to an artisan weaver. The latter has to make a pecuniary outlay; he has costs of production. He must

buy the loom, the yarn, and also his food. These are his costs of production. But will he calculate on this basis the value of the linen which he weaves? In that case his handiwork will hardly be lucrative; it will yield him no surplus which he could save. And a portion of his costs of production—his outlay for food and the loom—will remain the same whether he works 4 or 12 hours per day. Will he not therefore reckon the product of 12 hours higher than that of 4 hours, apart from raw material? It is plain that he will reckon his labour as a value-forming element in the cost of material.

Matters turn out differently as far as the capitalist is concerned. The product costs him no labour at all, but only money. He pays with money not merely for the means of production, but also for the labour, and therefore so far as he is concerned all the conditions of production resolve into an expenditure of money, and the latter seems to him to be the value-forming factor. But he would make a grimace if he were assured that the value of his product was equal to the amount which he expended for its production. He does not embark on production merely to recoup his expenditure of money upon production. He also wants to make a profit. This is the reason why he has parted with his money for productive purposes, instead of consuming it. He therefore adds the "current" profit to the costs of production. The price fixed in this manner is the minimum price, which he is at least obliged to realise, if, according to his notions, he is not to work at a loss.

According to capitalist ideas, profit is part of the costs of production which determine the value of a product. *This* "value" now turns out to be nothing more than the production price of the Marxian theory, which again can only be understood in the light of the law of value.

Use-value, market-price, production-price—these are the categories which are put before us by the theories of value which differ from the labour theory of value. They are either categories which, as in the case of use-value, are only concerned with exchange-value in so far as they form its pre-requisite, but not one of its determining factors; or such as are derived from exchange-value, like production price or market price, which do not explain the exchange relation but depend for their own explanation upon the elucidation of this relation.

These theorists content themselves with regarding the ideas which the buyers and sellers or the capitalists have of their business operations as the real bases of these operations. They believe that a phenomenon is scientifically explained if they collate and reproduce the ideas of the men practically engaged therein. But to do this no science is requisite. Science should reveal the ultimate causes of social processes and relations, of which the participants are often only incompletely aware, when they have not formed erroneous ideas about them.

Among the theories of value here mentioned, that comes nearest to the truth which seeks the determining cause of value in the costs of production. But it breaks down on the point of the average profit. Apart from the labour theory of value, none can explain what determines the magnitude of the average profit, and why, under certain conditions, it amounts to about 10 per cent., and not 100 or 1,000. The other theories content themselves with either justifying or explaining psychologically the appropriation of profit. But the profoundest jurisprudence and the subtlest psychology cannot explain whence profit is derived, and how it is created.

The theory of profit is extremely important for the comprehension of social ramifications. Nevertheless, we will not pursue it farther at this juncture, but return to

the theory of surplus-value. The theory of profit is the theory of the distribution of the spoil—of the surplus-value—among the various sections of the ruling classes. Although the industrial or agricultural capitalist is the prime mover in the creation of surplus value, he is not able to retain it all. If he employs his capital in a branch of production, in which it must assume a lower organic composition, he is obliged to cede a portion of the surplus-value to other capitalists who have invested their capital in branches of production representing a higher organic composition; as he does not notice this process of equalisation, it does not cause him any qualms. He must also—and this he notices very plainly—pay a portion of his profit as interest to the money capitalist from whom he borrowed money, leave a portion to the merchant as trading profit, and finally, if he be a tenant farmer, cede a portion as ground rent to the landowner or—if he is his own landlord—set it aside to pay off the capital which he had been obliged to employ for the purchase of his property.

But, important as all these relationships are, what chiefly interests us here is the relation between the capitalist and the worker, not indeed that between the individual worker and the individual capitalist, but that between the capitalist class and the working class. The theory of profit does not serve to explain this relationship, but rather to obscure it, because it makes the magnitude of profit dependent upon a series of circumstances which have nothing at all to do with the relation between capital and labour.

Whatever form the profit of the individual capitalist may take, its magnitude depends in the last resort upon the magnitude of the surplus-value, and therefore upon the degree of the exploitation of the wage worker. This applies above all to the whole of the capitalists, as the

total sum of profits is equivalent to the total amount of the surplus-value.

It is not from the laws of profit, but from those of surplus-value that we shall best be able to understand the class antagonism and the class struggle between capital and labour and the peculiarity of the capitalist mode of production.

We shall therefore deal again with value and surplus-value in the following pages, starting from the assumption that price is equal to value and profit to surplus-value. In this case we must leave out of account the average rate of profit and the production prices, just as the resistance of the air is left out of account in calculating the law of gravitation.

Of course, the factors which are here ignored must be taken into consideration in the practical application of the theory.

CHAPTER V

THE WORKING-DAY

The necessary labour-time and the surplus labour-time together form the working-day.

Under given conditions—the level of the productivity of labour, the needs of the working class, etc.—the necessary labour-time is a definite magnitude. In our example we have assumed this magnitude to be 6 hours. It goes without saying that under no mode of production could the working-day be less than the necessary working-time. It must be longer than the latter under the capitalist mode of production. The longer the surplus labour-time, the greater—other conditions being equal—the rate of surplus-value. The capitalist endeavours to extend the working-day as much as possible. Most of all he would like to keep the worker working for 24 hours without interruption.*

But the worker eventually collapses if he is not allowed a pause for rest, for sleep, and for meals. The capitalist, however, endeavours to shorten these pauses as much as possible, and to claim the services of the worker during the whole of the remaining time. Labour-power cannot be separated from the labourer, and during the whole time that the use-value of labour-power belongs to the capitalist, the person of the labourer also belongs to him. Every minute of the labour-time which the worker em-

* During the Austrian Parliamentary Inquiry into Labour Conditions in 1883, it transpired that weavers worked from Saturday morning to Sunday morning in various sheds in Brünn.

ploys for himself appears to the capitalist as theft from his own capital. But precisely because labour-power and the labourer are indissolubly bound up with each other, the interest of the latter demands the greatest possible shortening of labour-time. During the production process he is only a part of capital; under the capitalist mode of production he does not become a man until he has ceased working. But by the side of this moral motive for the shortening of the labour-time, there also exists a material motive. Capital strives to take more than is due to it according to the rules of commodity exchange.

If the capitalist buys the daily labour-time at its value, its use-value is only accorded him for one day; that is, he may utilise the labour-power daily for only so long as would not impair the recuperation of the worker. If any one purchases the yield of an apple tree, and, with the object of extracting as much profit as possible from the tree, not only shakes down the apples, but also saws off a branch, in order to utilise the wood, he breaks the contract into which he has entered; in future years the tree will not yield as much fruit as formerly. The same thing happens if the capitalist causes the worker to work excessively long hours. This is done at the expense of the worker's capacity for work and duration of life. If, consequent upon overwork, the worker's capacity for work is reduced from forty to twenty years, this means that capital has on an average used up the use-values of two working days in one day; capital has paid the worker for the labour-power of one day, and appropriated the labour-power of two days. The capitalist preaches to the workers thrift, and even prudence, the while he makes them waste the sole thing they possess, their labour-power.*

* Marx quotes a passage from an article by Dr. Richardson in the *Social Science Review*, 1863. It states: "In Marylebone, blacksmiths die at the

We are not dealing here with the capitalist as a private person, but as the representative of the capitalist mode of production whose commands he executes, irrespective of whether he is influenced by personal greed or is driven by competition.

We perceive here an antagonism between the interests of the working class and of the capitalist class. The former strives to shorten the working-day as much as possible, the latter to lengthen it as much as possible. The result of the division between the two classes is a struggle which is still going on to-day, but which commenced centuries ago and was historically of the highest significance. In this struggle the working proletarians recognised the solidarity of their interests; it was the chief driving force behind the consolidation of the workers as a class and the development of the Labour Movement as a political movement. The most important among the practical results of this struggle up to date is the State regulation of the length of the working-day, the normal working-day.

In England, the motherland of modern industry, the conditions and causes of this struggle developed the soonest and in the most acute forms, and there earlier than elsewhere the struggle broke out. "The English factory workers were the prize fighters not only of the English, but of the modern working class generally, just as their theorists first threw down the gauntlet to the theorists of capital." The struggle over the length of the working day

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rate of 31 per thousand per annum, or 11 above the mean of the male adults of the country in its entirety. The occupation, instinctive almost as a portion of human art, unobjectionable as a branch of human industry, is made by mere excess of work, the destroyer of the man. He can strike so many blows per day, walk so many steps, breathe so many breaths, produce so much work, and live an average, say of fifty years; he is made to strike so many more blows, to walk so many more steps, to breathe so many more breaths per day, and to increase altogether a fourth of his life. He meets the effort; the result is, that producing for a limited time a fourth more work, he dies at 37 for 50."

and its causes are nowhere to be followed so distinctly as in England, whose Press, parliamentary debates, commissions of inquiry, and official reports, especially those of the factory inspectors, have furnished such ample material as is to be found in no other State, a material which was unique when Marx completed the first part of "Capital" in 1866.

Marx has therefore only described in detail the struggle for the normal working-day as it was fought out in England. His exposition is supplemented by Engels' book, "The Condition of the Working Class in England." This book only deals with conditions up to the year 1844, that of Marx only up to 1866. Nevertheless, their descriptions of the struggle for the normal working-day possess more than a mere historical interest. The conditions which they describe, the tricks and subterfuges practised by capital in order to prolong the working-day as much as possible, or to render its enforced curtailment illusory, the attitude of political parties and of the working class towards these machinations—all this is so typical that the corresponding later development on the Continent seems only to be an echo of the English. The conditions which Engels described in the 'forties and Marx in the 'sixties were in active operation in the 'eighties and 'nineties. The scanty material, the private investigations and official information concerning German and Austrian industrial conditions, which came to light in the last two decades of the last century, was nothing but an eloquent illustration of the contentions of "Capital."

Marx says in his preface that he has given so large a space in the first volume of his work "to the history, the details, and the results of English factory legislation," because one nation may and should learn from another, and because their own interests dictated to the ruling classes the removal of all legally removable hindrances to

the free development of the working class. Moreover, Marx's demonstrations have not been entirely without result. The facts which he adduced were so striking, so irrefutable, that they could not fail to make an impression, not only upon the working class, but also upon the reflecting members of the ruling classes. The progress of factory legislation in Switzerland, Austria, and Germany are not least due to the effect which "Capital" produced.

But the number of reflecting members of the *bourgeoisie* and of those who are not dominated by class prejudices is still slight, as is also the influence of the working class, and the prepondering impression made on us in reading the sections of "Capital" devoted to factory legislation is not one of satisfaction with what has been achieved, but of shame at the colossal ignorance which still prevails among us concerning factory legislation and which made it possible for opinions to be uttered in European Parliaments which had long since been refuted in England by the logic of facts.

It is impossible to give here a detailed account of what is set forth in "Capital" concerning the working-day. We recommend everybody who can do so to study in "Capital" itself the details of the conditions in the English branches of industry where the working-day was unrestricted by law, such as night-work, the relay system, and finally the struggle for the normal working-day. There are no better weapons for labour protection legislation than the eighth and thirteenth chapters of "Capital."

Even to-day, nearly sixty years after the appearance of the first volume of "Capital," its arguments are always readable, because, although many facts have altered, the fundamental principles remain unchanged.

Generally speaking, we are able to trace two antago-

nistic tendencies with respect to the State regulation of the working-day in England. From the fourteenth to the end of the seventeenth century laws were passed for the prolongation of the working-day. From the beginning of the nineteenth the tendency of legislation has been in the direction of its curtailment.

At the beginning of the development of the capitalist mode of production capital was still too weak to extract a respectable quantity of surplus-value from the worker by the mere pressure of economic conditions. Even in the eighteenth century complaints were raised that the industrial workers of England only worked four days a week, as they earned sufficient in this time to keep them for the whole week. In order to depress wages and prolong the working-time, it was then proposed to shut up vagabonds and beggars in a workhouse, which should be a House of Terror. In this "House of Terror" the working-day was to be twelve hours.

A hundred years later, in the "century of humanity," it was ascertained by a Commission of Inquiry that in the Staffordshire potteries children of seven were employed day after day for fifteen hours at a stretch.

Capital no longer needed compulsory legislation and the House of Correction to compel the workers to perform surplus-labour; it had become an economic power to which the workers were obliged to submit. From the last third of the eighteenth century onwards a veritable race after surplus-labour commenced in England, one capitalist attempted to outbid another in the immoderate extension of the labour-time.

The working class decayed fearfully, both physically and morally; it visibly degenerated from year to year; even the constant recruitment of vigour through the emigration of agricultural workers into the factory districts could not check the process of destruction. "The

cotton industry is ninety years old," Mr. Ferrand was able to exclaim in the House of Parliament in 1863. "In three generations of the English race it has used up nine generations of cotton spinners."

The manufacturers did not allow themselves to be disconcerted by this. In spite of the rapid consumption of human life, there was no diminution in the labour-power at their disposal: from the countryside, from Scotland, Ireland, and Germany, the candidates for death flocked in multitudes to the English factory districts and to London, driven from their homes by the decay of domestic industry, and the transformation of arable land into pasture, etc.

Although the prospect of the extinction of the population of England did not prevent the manufacturing class as such from extending the working-day, it was bound to arouse the solicitude of English statesmen, who did not belong to the manufacturing class, and even the solicitude of the far-seeing members of this class itself. What would become of England, what would become of English industry if her population were so unceasingly absorbed by capitalism.

Just as it became necessary in all capitalist States to impose as many restrictions as possible upon the devastation of woods and forests by capital, so the necessity imposed itself of setting limits to the callous exploitation of the national labour-power. The statesmen who perceived this necessity were urged forward by the English Labour Movement, the first modern movement of this kind.

At the beginning of the nineteenth century Robert Owen had put forward the demand for a limitation of the working-day, and actually introduced into his factory a working-day of 10½ hours, which was attended by great success. The Labour Movement, which rapidly grew

after the eighteen twenties and was organised as the Chartist Party after 1835, extorting one concession after another from the ruling classes of England, had set before it as its chief object universal suffrage and the 10-hour working-day.

With what obstinacy and bitterness the struggle was pursued, how capitalists and lawyers exerted all their ingenuity to render nugatory every concession extorted, with what courage and what energy the factory inspectors championed the cause of the working class, even against the State Ministers—above all Leonard Horner, whose memory should be cherished by every worker; how the Free Traders promised the workers the 10-hour working-day so long as they needed their support, only to break their promise in the most cynical manner once they had carried out the abolition of the Corn Laws; how finally the threatening attitude of the workers compelled the fixing of the 10-hour working-day for certain categories of labour, at least—all this is described fully and vividly, with abundant quotations, in "Capital."

With the beginning of the 'fifties the English Labour Movement passed into smoother waters. It could not escape the reaction of the defeat of the working class in Paris, as well as of the momentary overthrow of the Revolution upon the entire Continent. On the other hand, the essentials of the aims of the Chartist Movement were being realised more and more, and at the same time English industry entered upon a period of great prosperity, at the expense of the industry of other countries, into the whirlpool of which the English working class was also drawn, so that it came to imagine that an identity existed between the interests of English Capital and English Labour as against foreign Capital and Labour.

Nevertheless, English factory legislation made steady

progress, even during this peaceful period. By the Act of the 27th May, 1878, the whole of the legislation between 1802 and 1874, which comprised sixteen different factory Acts, was simplified and codified. The most important advance represented by this Act consisted in the removal of the distinction between factory and workplace. Since then Labour protection has applied not merely to factories, but also to smaller workplaces, and to a certain extent to domestic industry. The protection of this law does not extend to adult men, but only to children, young persons, and women. The Act of 1878 was then improved by a series of further Acts, amongst which the Acts of 1891 and 1901 were specially important. Children under 12 years of age are entirely excluded from industrial labour. Children from 12 to 14 may only work daily half as long as young persons (from 14 to 18 years) and women. For the latter the weekly labour-time amounts to 60 hours, except for textile factories, in which only 56 hours are permitted. Sunday work is prohibited for protected persons, as well as work on Christmas Day and Good Friday. Moreover, young persons have the right to an annual holiday of 8 half and 4 whole days, half of which, at least, must be granted between the 15th March and the 1st October.

The effect of these laws in the majority of cases was to limit the working-time of men to 10 hours, where the latter were employed with women and children. But how necessary is an extension of the protection to men is shown by the miserable plight of the English workers in such unprotected branches of labour as, owing to the absence of favourable conditions, do not form a favoured class, an aristocracy of labour.

The consequences of the normal working-day were surprisingly favourable. By it the working class of England was actually saved from destruction, and English industry from stagnation. Far from hindering the develop-

ment of industry, the introduction of the 10-hour day was followed by a colossal, hitherto unprecedented, expansion of English industry. The normal working-day has become a national institution in the country of Manchesterdom, and nobody any longer dreams of subverting it. The manufacturers themselves, who at first combated with all their energy the introduction and then the enforcement of the normal working-day, later on proudly smote their breasts and declared it to be one of the foundations of the superiority of English industry over that of the European Continent.

The example of England and the development of capitalism with its consequences in Continental countries created in the latter the necessity for a regulation of labour-time, which was then carried out in a more or less thorough manner, according to the strength of the Labour Movement and the insight of the ruling political parties.

The most far-reaching among the Continental laws for the protection of labour was decidedly that of republican Switzerland. The Federal Act of the 23rd March, 1877, which supplanted the various Cantonal Factory Acts—so far as the latter existed at that time—established an 11-hours working-day for all workers employed in factories. It went farther than the English law, which did not protect adult men; it remained behind this law in so far as it fixed the maximum labour-time at 11 instead of 10 hours, and left the smaller workplaces and domestic industry outside its scope. Children under 14 might not work in factories at all; for children between 14 and 16 the period of instruction together with work in the factory might not exceed 11 hours.

France revived her first factory Act in 1841. This Act fixed the daily labour-time of children between 8 and 12 at 8 hours, that of children between 12 and 16 at 12 hours.

But miserable as this law was, it remained a dead letter, as also did the 12-hour normal working-day for all workplaces and factories, which was passed into law in 1849 under the pressure of the Revolution. It made no provision for inspectors to supervise the execution of the law. It was not until the Act of the 19th May, 1874, that a serious beginning was made with labour protection legislation. This Act prohibited all child labour under the age of 10 and for certain branches of industry under the age of 12. The working-day of children between 10 and 12 was limited to 6 hours, that of young persons between 12 and 16 to 12 hours. For the execution of this law State factory inspectors were appointed, with local committees to support them.

In 1892 this Act was improved. The employment of children under 12 was prohibited, the maximum working-day for children between 12 and 16 was fixed at 10 hours, for young persons between 16 and 18 at 11 hours daily or 60 hours weekly at the most, for adult woman workers at 11 hours.

Repeated attempts to substitute a 10-hour for the 11-hour working day broke down on the opposition of the Senate. Eventually Millerand succeeded in effecting a compromise. By the Act of the 30th March, 1900, the working-day was fixed at 10 hours for all classes of workers in factories where women and children work together with men, but this improvement was purchased at the expense of the children. For the working-day was fixed at an equal length for all classes of workers, including children of 12. During the first two years after the Act came into force the working-day was 11 hours; during the following two years 10½ hours, and then the 10-hours day was really enforced. Temporarily the labour-time of the workers most needing protection, the children, was even prolonged.

In Austria the 11-hours normal working-day for factories has existed since the 11th June, 1885, albeit with the proviso that the Minister of Commerce is permitted to prolong the working-day by one hour for certain branches of industry. This exception frequently tended to become the rule.

Children under 12 might not be employed in regular industrial work (even in the smaller workplaces). The maximum working-day was fixed at 8 hours for young persons. It seems that for the learned members of the Austrian and many other parliaments childhood ends at 12 years, and then the child becomes a "young person."

German labour protection legislation was no better than that we have so far surveyed. The industrial legislation responsible for the labour protection regulations which were in force until recently dated from May, 1891.

In accordance with these regulations, children under 13 might not be employed in factories, children between 13 and 14 might not work more than 6 hours, between 14 and 16 not more than 10 hours daily. A normal working day of 11 hours was fixed for woman workers over 16 years of age. The supplementary law for the regulation of industry of 1908 at least brought women the 10-hours day. Such were the laws protecting labour in the most important States of Europe prior to the war.

In the decades before the war efforts were made from time to time to impart an international character to the movement for the regulation of the working-day. First of all the workers of Switzerland, France, Germany, Austria, and other countries discussed this principle, and in course of time the Governments were induced to take up the question.

The Federal Council of Switzerland was the first Government to pronounce in favour of international labour pro-

tection. Its endeavours to interest other Governments in this matter broke down over the hostile attitude of the German Government. To Bismarck the normal working-day was a bogey. The fall of the Iron Chancellor cleared the path for the progress of labour protection legislation in Germany; the new policy seemed for some time to be aiming at drastic social reforms. Among others, the idea of international labour protection legislation was taken up. The Emperor Wilhelm II. summoned a conference of representatives of European States to Berlin in March, 1890, for the discussion of this idea. As is well known, the conference produced no result.

On the other hand, the international action of the workers in favour of the 8-hour day, inaugurated by the Paris International Congress of 1889, speedily assumed the dimensions of a world-wide movement. The May Day celebrations became an occasion for imposing and rejoicing demonstrations of the international militant proletariat.

Its tenacious struggle was eventually crowned with success. The Washington Agreement of the year 1919, to which almost all important States are parties, raised the 8-hour day to the level of an international law. It is true that the ratification of this agreement in the most important economic countries has been prevented by the reaction which followed the revolutionary waves of the years 1917–1919. The United States have completely withdrawn from the League of Nations, and therefore from the International Labour Office, which supervises the enforcement of the Washington resolutions, and neither Great Britain, nor Germany, nor France have pronounced the formal ratification. The reactionary pressure in Germany was even strong enough to compel an infraction of the 8-hour day; yet a reverse movement may even now be detected there. Apart from this exception, which will

shortly be a thing of the past, the 8-hour day, which lately seemed to be an ideal only attainable after the lapse of a long time, has become an international fact. It signifies one of the most important steps towards the emancipation of the working class.

CHAPTER VI

THE SURPLUS-VALUE OF THE "SMALL MASTER" AND THE SURPLUS-VALUE OF THE CAPITALIST

GIVEN the value of labour-power and the corresponding labour-time necessary for the worker's maintenance, the mass of surplus-value which the individual worker supplies is also determined by the rate of surplus-value. If the value of labour-power is 3*s.*, and the rate of surplus-value equal to 100 per cent., the mass of surplus-value which labour-power creates is equal to 3*s.* But how large is the total mass of surplus-value which falls to a capitalist under specific circumstances? Assume he employs 300 workers upon the conditions indicated above. The variable capital which he daily expends is equal to £45, the rate of surplus-value 100 per cent. "The mass of surplus-value produced is equal to the magnitude of the variable capital advanced, multiplied by the rate of surplus-value."

If one of these factors be taken away, the mass of surplus-value may be kept at the same level through an augmentation in the other. On the other hand, an increase in the one may be accompanied by a corresponding decrease in the other without altering the mass of surplus-value. This will be clear from some examples. A capitalist employs 300 workers; the necessary labour-time amounts to 6 hours, the value of the labour-power 3*s.*; the daily labour-time 12 hours. The mass of the surplus-value produced daily is equal to £45. The pliability of the

workers enables the capitalist to increase the labour-time to 15 hours. Other conditions remaining equal, the rate of surplus-value now amounts to 150 per cent.

$$\left(\frac{\text{9 hours surplus labour}}{\text{6 hours necessary labour}}\right).$$

In order to produce the same mass of surplus-value (£45) as before, the capitalist no longer needs to advance £45 variable capital, but only £30; instead of 300 workers, 200 now suffice.

If, however, the workers are not pliable, if, on the contrary, through some specially lucky strike they enforce a reduction of labour-time from 12 to 9 hours, the rate of surplus-value would only amount to 50 per cent.

$$\left(\frac{\text{3 hours surplus labour}}{\text{6 hours necessary labour}}\right).$$

In order to produce the same mass of surplus-value as formerly, the capitalist must now employ 600 workers, and advance a variable capital of £90.

That the first course is the more agreeable for him to adopt needs no emphasis. The capitalist strives to increase the mass of surplus-value as much as possible; but it suits him better to achieve this object by increasing the rate of surplus-value than by increasing the variable capital through adding to the number of workers employed.

The rate of surplus-value cannot, however, be arbitrarily fixed; under clearly-defined circumstances it is a greater or a lesser magnitude. Given the rate of surplus-value, the production of a certain mass of surplus-value requires the employment of a definite quantity of variable capital to create it and a definite quantity of constant capital to absorb it.

This circumstance has become of historical importance.

Even before the development of capitalism, wage workers were employed who produced surplus-value.

This was particularly the case in guild handicraft. But the number of workers which a mediæval master-craftsman employed was small, and the mass of surplus-value which the master pocketed was correspondingly slight. As a rule it did not suffice to assure him a definite income, and he was obliged to work with his own hands; the "small" master is no wage worker and yet no capitalist: an intermediate type between the two.

If the employer of wage earners was to become a real capitalist, he was obliged to employ so many workers that the mass of surplus-value produced by them not only afforded maintenance suitable to his class, but also enabled his wealth constantly to increase, which is a necessity for him under the capitalist mode of production, as we shall see.

It is not every sum of money which enables its owner to become a capitalist. If an owner of money is to become a capitalist, his supply of money must be large enough to suffice for the purchase of an amount of labour-power and of the means of production greater than is required by the limits of handicraft business. Moreover, the owner of money must be able to produce unfettered by any obstacles which prohibit him from increasing the number of workers beyond the necessary limits. The guild system of the Middle Ages attempted to prevent the transformation of the master craftsman into a capitalist by restricting the number of wage workers which one master could employ.

"It was the merchant who became the principal of the modern (capitalist) workshop, and not the old guild master." ("The Poverty of Philosophy.")

The guild master is an appropriator of surplus-value, but not yet a fully-fledged capitalist.

The guild journeyman is a creator of surplus-value, but not yet a fully-fledged proletarian wage worker.

The guild master still works himself. The capitalist is only a captain and supervisor of the labour of others.

The guild journeyman still employs the means of production, which are only there on his account, to facilitate his work. He is the master's assistant and collaborator, and as a rule may become a master himself.

On the other hand, the wage worker under the capitalist mode of production is the sole worker in the production process, and the source of surplus-value, of which the capitalist is the extractor. The means of production now serve primarily to absorb the labour-power of the worker: now it is they which employ the worker, who can never actually become a capitalist. The instruments of labour are no longer there to facilitate the work of the worker; now they assist in chaining him to his work.

If we glance around a capitalist factory, we see perhaps thousands of spindles and thousands of hundredweights of cotton. They have all been bought in order to become a source of profit, that is, to absorb surplus-value. But they cannot become profitable without the addition of labour, and therefore call out for labour, and again for labour. The spinning machine is not installed to facilitate the work of the worker, but the spinner is put there to make the machine profitable. The spindles revolve and demand human labour-power: the worker is hungry, but the spindle continues working, and therefore he must bolt his dinner while he serves his mistress. His strength ebbs and he wants to sleep, but the spindle still revolves briskly and requires more labour; and because the spindle revolves the worker may not sleep.

The dead tool has subjugated the living worker.

CHAPTER VII

RELATIVE SURPLUS-VALUE

If the necessary labour-time, that is, the portion of the working-day during which only so much value is produced as the capitalist has expended upon the commodity labour-power, is a definite magnitude, then the rate of surplus-value can only be increased by a prolongation of the working-day. If, for example, the necessary labour-time amounts to 6 hours daily and is unalterable, which is the case under given conditions of production, then the rate of surplus-value can only be increased by a prolongation of the working-day.

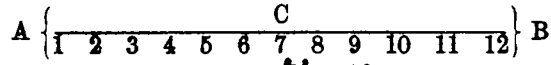
The consequences of this circumstance have been considered in the fourth chapter.

But the working-day cannot be extended into infinity. The effort of the capitalist to prolong it encounters natural limits in the exhaustion of the worker, moral limits in his claims for free activity as a man, political limits in the State limitation of the working-day enforced by various conditions.

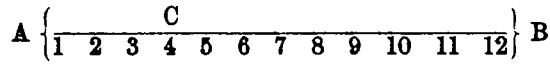
Let us assume that the working-day has reached a limit beyond which it cannot be prolonged under existing circumstances, and that this limit is provided by the twelfth working-hour. The necessary labour-time amounts to 6 hours, the rate of surplus-value is therefore 100 per cent.

How can this rate be increased? Very simply. If I reduce the necessary labour-time from 6 to 4 hours, the period of surplus labour is extended from 6 to 8 hours; the

length of the working-day remains the same, but the ratio of its two constituent parts, the necessary and the superfluous labour-time, has changed, and with it the rate of surplus-value. By the reduction of the necessary labour-time from 6 to 4 hours with a 12-hour working day, the rate of surplus-value has risen from 100 to 200 per cent., it has doubled. The process is most easily understood if the length of the working-day and its parts are expressed in lines of a certain length. Let us assume the line A—B represents a 12-hour working-day, the line section A—C the necessary, the section C—B the superfluous labour-time:



How can I prolong C—B by three lineal sections, which represent working-hours, without extending A—B? By shortening A—C:



On the first line C—B is as long as A—C. On the second C—B is twice as long as A—C.

It is therefore possible to obtain surplus-value not only through the absolute prolongation of the working-day, but also through the shortening of the necessary labour-time.

The surplus-value produced through the prolongation of the working-day Marx calls absolute surplus-value; on the other hand, the surplus-value which arises from the shortening of the necessary labour-time and the corresponding change in the ratios of the two constituent parts of the working-day, is relative surplus-value.

The endeavour of the capitalist to augment the surplus-value through the latter method is shown in undisguised form in his attempts to reduce wages. As, however, the value of labour-power under given conditions is a definite

magnitude, this endeavour can only aim at reducing the price of labour-power below its value. Important as this circumstance is in practice, we cannot discuss it at this juncture, where we are concerned with the foundations of the economic movement, not with its external phenomenal forms.

We must consequently proceed for the time being upon the assumption that everything happens normally, that price corresponds to value, and therefore the wage of labour-power to its value. We need not yet discuss how wages can be depressed below the value of labour-power and what are the consequences thereby incurred; we have only to discover how the value of labour-power is diminished.

Under given conditions, the worker has definite needs: he requires a definite quantity of use-values for the maintenance of himself and his family. These useful articles are commodities, their value is determined by the labour-time socially necessary for their production. This is already known to us, and needs no further demonstration. If the average labour-time necessary for the production of the above-mentioned useful objects falls, the value of these products also falls, and therewith the value of the labour-power of the worker, and that part of the working-day necessary for the reproduction of this value, without restricting the customary needs of the worker. In other words: if the productivity of labour rises, the value of labour-power, under certain circumstances, falls. Only under certain circumstances, that is to say, only when and in so far as the rise in the productivity of labour curtails the labour-time which is necessary for the production of the means of life which the worker customarily requires. If the worker is accustomed to wear boots, instead of going bare-footed, the value of labour-power will be diminished if 6 instead of 16 working-hours are necessary for the

manufacture of a pair of boots. If, however, the productivity of the labour of a diamond-cutter or of a bobbin-maker is doubled, this has no influence upon the value of labour-power.

But an increase in the productivity of labour is only possible through an alteration in the methods of production, through an improvement in the instruments or the methods of labour. The production of relative surplus-value is therefore dependent upon a transformation in the labour process.

This transformation and continuous perfecting of the mode of production is a natural necessity for the capitalist system of production. Of course, the individual capitalist is not necessarily aware of the fact that the cheaper he produces, the lower the value of labour-power, and, other circumstances remaining equal, the higher the surplus-value. Competition, however, forces him to make continual improvements in the process of production. The incentive to get the better of his competitors causes him to introduce methods which enable him to produce as many commodities as before in less than the average necessary labour-time. Competition likewise compels his competitors to introduce the improved process. The exceptional profits which are made so long as it remains isolated disappear as soon as it becomes general, but according as this process influences more or less the production of the necessary means of life, there remains as a permanent result a more or less considerable fall in the value of labour-power and a corresponding increase in the relative surplus-value.

This is only one of the circumstances owing to which capitalism is continually transforming the mode of production and therefore ever more increasing the relative surplus-value.

If the productive power of labour rises, the rate of

relative surplus-value also rises, while the value of the commodities produced falls correspondingly. Thus we see developing the apparent contradiction that the capitalists are tireless in their endeavours to produce cheaper and cheaper, to impart less and less value to their commodities, in order to be able to pocket more and more value. We observe, however, the emergence of yet another seeming absurdity: the greater the productivity of labour, the greater, under the domination of the capitalist mode of production, is the surplus labour, the superfluous labour-time of the worker.

The capitalist mode of production strives immensely to increase the productivity of labour, to reduce the necessary labour-time to a minimum, but at the same time to prolong the working-day as much as possible.

We have already seen in the fourth chapter how it prolonged the working-day. Let us now consider how it curtailed the necessary labour-time.

CHAPTER VIII

CO-OPERATION

In a preceding chapter we have shown that the employment of wage workers alone is not enough to become a capitalist in the full sense of the word. The employer of wage workers only becomes a capitalist when the mass of surplus-value created by them is large enough to assure him a comfortable income and to increase his wealth, without his being obliged to put his own shoulder to the wheel. This pre-supposes the simultaneous employment of a number of workers which far surpasses the limits assigned by guild handicraft. "A greater number of labourers working together, at the same time, in one place (or, if you will, in the same field of labour), in order to produce the same sort of commodity under the mastership of one capitalist, constitutes, both historically and logically, the starting point of capitalist production."

The distinction between the capitalist and the handicraft mode of production is therefore at first only one of degree, not of kind. Whether I employ three cloth weavers at three looms or thirty weavers at thirty similar looms in the same room and at the same time, would at first seem only to involve the distinction that in the latter case ten times as much value and surplus-value is created as in the former.

But the employment of the larger number involves still further distinctions. In the first place, we may recall the law of numbers. Individual peculiarities are all the more

marked the fewer the persons concerned, whereas they tend to disappear in the degree that we are concerned with mass phenomena. If I wanted to learn the average length of life of a man, I should probably be liable to error if I calculated it from the length of life of five or six persons. I could, however, be pretty sure of approximating to the truth if I calculated it from the length of life of about a million persons.

Similarly, the individual differences between workers are much more marked if I employ only 3 than if I employ 30. In the latter case the greater output of the good and the lesser output of the bad cancel each other, and an average amount of work is performed. According to Burke, with the simultaneous employment of 5 field labourers, all individual differences disappear, and consequently any given 5 adult farm labourers taken together will, in the same time, do as much work as any other 5.

For the small master it is a matter of chance whether his workers perform average social labour. Only in the case of the capitalist is it possible for the labour he sets in motion to be average social labour.

The simultaneous employment of many workers at the same place brings with it still further advantages. I do not have to pay ten times more for the erection of a workplace in which 30 weavers weave than for that of a shed in which only 3 weave. Nor does a warehouse for 100 bales of wool cost ten times as much as one for 10 bales, etc. Consequently the value of the constant capital, which reappears in the product, diminishes, other things being equal, in inverse ratio to the number of workers employed in a given labour process. This is accompanied by a growth of the surplus-value in proportion to the total capital advanced, and a decline in the value of the product, and also, under the circumstances discussed in the previous chapter, in the value of labour-

power. In this case the surplus-value also grows in relation to the variable capital.

The simultaneous employment of many workers at the same place for the achievement of a definite result leads to their systematic working together, to co-operation. This creates a new social productive power, which is more than and different from the sum total of the individual units of labour-power of which it consists.

The new power is mass power from the start ; it renders many labour processes possible which were not practicable or only incompletely so under previous conditions. Thirty men easily lift a tree in a few moments at which three men would vainly exert themselves the whole day.

Co-operation also makes possible the performance of work for which, not mass power, but the concentration of the greatest possible amount of effort within a short period is necessary ; this is the case, for example, with the harvest.

Even where neither a great volume of power nor its spatial or temporal concentration is required, co-operation has a beneficial effect ; it raises the productivity of labour. Every one is familiar with the way in which the building stones are despatched to the scaffolding in the building of a house ; a chain of workers is formed, each of whom passes the stones to his neighbour. In consequence of this systematic co-operation, the building stones perform their journeys much more quickly than if they were carried up to the scaffolding by the individual workers.

Finally, it should not be overlooked that man is a social animal, that his intellectual life is animated by social activity, and that ambition and emulation come into play. Thus the social labour progresses more quickly, and the output is correspondingly greater than that of isolated workers.

Under the capitalist system wage workers can only

co-operate if their labour-power is purchased by one and the same capitalist. The more labour-power there is to be purchased, the more variable capital is necessary; the more wage workers to be employed, the greater the quantity of raw materials, of tools, which they will use, and therefore the greater will be the amount of constant capital that is necessary. Consequently, the realisation of a certain degree of co-operation presupposes a certain magnitude of capital. The latter now becomes a prerequisite of the capitalist mode of production.

Co-operation is not peculiar to the capitalist mode of production alone. We saw that it existed in primitive forms among the Indians. It was clear to us that their systematic working together in the business of hunting required a systematic direction. This is necessary for all social labour, in whatever form it may be carried on. Under the capitalist mode of production the direction of production necessarily becomes a function of capital. Even in this investigation is revealed to us the fruitfulness of the Marxian distinction of the duplex character of commodity-producing labour. Corresponding to this duplex character, under the capitalist mode of production, the production process is, as we have seen, a combination of labour-process and value-breeding process. So far as the production-process appears as a labour-process, the capitalist figures as the director of production, and the function which he performs appears to be one which would be more or less necessary under any social labour-process. But in so far as it is a value-breeding process, the capitalist production-process is based on the antagonism of the interests of capital and labour, as has already been demonstrated in respect of the working-day. If the value-breeding process is to proceed undisturbed in the manner desired, it involves the subjection of the worker and the despotic rule of the capitalist. Value-breeding process

and labour process, however, form two different sides of one and the same process, of the capitalist process of production, and consequently the direction of production and the despotic rule of capital over the worker also seem inseparable. As the former is a technical necessity, bourgeois economy tells us that the rule of capital over labour is a technical necessity imposed by the nature of things, that with the abolition of the rule of capital, production itself, so far as it is a social process, would be destroyed, and that the rule of capital is a natural and necessary pre-requisite of civilisation!

Even Rodbertus declared that, as directors of production, the capitalists were officials of society and entitled to receive a salary. But as the capitalist only causes use-values to be produced because he cannot obtain possession of values in any other manner, the direction of production is for him nothing but a necessary evil, which he only undertakes because it is inseparably connected with the breeding-properties of his capital. He evades this evil where he can without jeopardising the surplus-value. If his undertaking is large enough, he transfers its management to subordinates. Sometimes he employs other methods to escape from the direction of production. During the cotton crisis at the beginning of the eighteen-sixties, for example, the English cotton spinners shut their factories in order to gamble on the Cotton Exchange, and extract their "salary" from these operations. The assertion that the capitalists deserve to be paid for their direction of production reminds us of the youngster who saw a tree full of splendid apples, which he could not reach without climbing a high wall. The apples were so seductive that he undertook the labour of climbing the wall, in which he succeeded after much toil. He was just enjoying the apples when the owner of the orchard came and inquired what right he had to take the apples. "I have

honestly earned them," answered the boy, "they are the payment for the hard work of climbing the wall." Just as the boy can only reach the apples by way of the wall, so as a rule the capitalist can only obtain surplus-value by way of directing production.

Another strange idea which is to be found in economic books should here be rejected. As we have previously assumed, the capitalist buys each unit of labour-power at its full value. But in the course of the systematic co-operation of the total labour-power which he purchases, a new productive force is developed. It produces more than if each of its units were employed on its own account. The capitalist does not pay for this new productive power. It has nothing to do with the commodity-value of labour-power, it forms a peculiarity of its use-value. It is not until during the labour process that this new force manifests itself, and therefore not until after the commodity labour-power has passed into the possession of the capitalist, after it has become capital. Consequently, it seems to the capitalists and their advocates as if this increase in the productivity of labour is not to be ascribed to labour, but to capital. "Because the social productive power of labour costs capital nothing, and because, on the other hand, the labourer himself does not develop it before his labour belongs to capital, it appears as a power with which capital is endowed by Nature."

As already mentioned, co-operation is not peculiar to the capitalist mode of production. Social, common production was a feature of the primitive communism which is found in the cradle of the human race. Originally agriculture was co-operative, carried on in common. The assignment of land to particular families was only a later development. In the first part we have given instances of co-operation among the Red Indians and the Indians.

The development of commodity production destroyed

this primitive co-operation. Although commodity production widened the circle of those who work for one another, working with one another essentially ceased, except under the form of compulsory labour, the labour of slaves, serfs, or subjects for their lords.

Capital, which arises in opposition to the isolation and dispersion of forces incident to peasant economy and handicraft, again develops co-operation, common social work. Co-operation is the basic form of the capitalist mode of production, its peculiar historic form within commodity production. Capital strives more and more to develop social production, it unfolds ever higher forms of co-operation: manufacture, the great industry. Its object in doing so is to increase the sum of surplus value. But without wishing to do so, it prepares in this way the ground for a new and higher form of production.

Handicraft commodity production was based on the dispersion and isolation of business; a capitalist business, on the other hand, is based upon the combination of labour, upon social common production. Handicraft commodity production presupposes the existence of many small independent commodity producers; the capitalist business, based on co-operation, implies the absolute authority of the capitalist over the individual workers.

In the first part we have considered primitive co-operation and division of labour in the light of two examples; we have traced the rise of commodity production; now we see developing the capitalist mode of production, which is commodity production and co-operative production at the same time.

If capitalist commodity production is distinguished from handicraft commodity production through the concentration of the business and the organisation of common social labour, capitalist co-operation, on the other hand, is distinguished from the primitive communistic co-operation

by the absolute authority of the capitalist, who is at the same time the director of production and the owner of the means of production, and who also receives the products of the co-operative labour which, under primitive co-operation, went to the workers themselves.

CHAPTER IX

DIVISION OF LABOUR AND MANUFACTURE

(1) *The Two-fold Origin of Manufacture; its Elements; the Detail Worker and his Tool.*

In the first part of this book we were able to use, as the basis of our exposition, Marx's "Contribution to the Criticism of Political Economy" and also, to some extent, his "Wage Labour and Capital," in addition to "Capital." Apart from "Capital" itself, we shall draw upon Marx's "Poverty of Philosophy," especially section 2 of the second chapter, entitled "Division of Labour and Machines," with regard to this and the following chapters, which deal with the division of labour and manufacture, machinery and modern industry.

The literature dealing with the disadvantages to the worker which are involved in the division of labour in capitalist manufacture is discussed more fully in "The Poverty of Philosophy" than in "Capital."

The above-mentioned section 2, therefore, forms not only a precursor, but also a supplement to the two chapters of "Capital," which have now to be taken into consideration. In our opinion, they occupy the highest position among all the writings of Marx, and, unfortunately, do not receive the attention they deserve from most of the readers of "Capital."

First of all we have to consider manufactures, "that industry which is not yet the modern large industry with its machines, but is no longer either the industry of the

Middle Ages or home industry" ("Poverty of Philosophy"). As the characteristic form of the capitalist process of production, it prevailed on the whole from about the middle of the sixteenth until towards the end of the eighteenth century.*

Its origin is of a twofold nature. On the one hand, capital finds in existence products which have to pass through the hands of various artisans before they are finished. Thus a coach passes out of the hands of the framemaker into those of the saddler, the upholsterer, the painter, the glazier, etc. In the place of the various kinds of independent craftsmen, the capitalist puts wage workers belonging to these branches of labour, who systematically co-operate in the building of a coach in a common workshop.

But manufacture also develops on opposite lines. The capitalist assembles a number of workers who all produce a similar product, for example, a pin-maker in a workshop. To each of them is assigned all the successive processes necessary for the manufacture of the product. As soon as a larger number of workers came to be employed in this way, it led naturally to a distribution of the various processes among the various workers. On the one hand, manufacture arose through the combination of various independent handicrafts, on the other, through the division of the various processes of a handicraft among various workers.

Whether, however, the process which is temporarily assigned to the worker in manufactures was formerly the independent process of a special handicraft or arose from

* The word manufacture is formed of the Latin words *manus* (hand) and *factus* (made, completed). One of the most important branches of industry to be dominated by manufacture was the working-up of fibrines, such as wool, cotton, and the like. Consequently, the workplaces of the textile industry are still called manufactures, although they do not fall within the province of manufacture, but are carried on with machines.

splitting up the processes of a handicraft, handicraft always formed its foundation, not only historically, but also technically. It remains an essential condition that every single operation is executed by the human hand. Alike in manufacture as in handicraft the success of the work is essentially dependent upon the skill, reliability and despatch of the individual worker.

But there is an immense distinction between the worker engaged in handicraft and the worker engaged in manufacture. The variety of processes which marks the former gives place in manufacture to the simplicity and monotony of processes which the worker executes day in and day out, year in and year out. The worker is no longer a deliberate, independent producer, but an independent part of a great labour mechanism.

The dexterity of the worker is, of course, enormously increased in the restricted sphere in which he moves. He discovers all kinds of tricks of the trade, passes them on to his colleagues, and learns others from them. The change of position and of tools involved in the variety of labour causes a waste of time and labour-power; this is obviated in the case of the detail worker in manufacture, who continuously works in the same place with the same tool. On the other hand, change of activity brings recuperation and stimulation which the detail worker lacks.

The division of labour in manufacture not only develops the dexterity of the worker, it also brings about a perfecting of his tools. A tool which is to serve for the most various processes cannot be perfectly adapted to each of these; a tool that is exclusively employed upon a particular process can be adapted to this and thereby rendered much more effective than the former tools.

All these circumstances bring about an appreciable

increase in the productivity of labour in manufacture as compared with handicraft.

(2) *The Two Fundamental Forms of Manufacture.*

So far we have considered the twofold origin of manufacture and its simple elements, the detail worker and his tool. Let us now turn to its aspect as a whole.

Manufacture possesses two fundamental forms essentially different from each other, which are determined by the nature of the product. The latter is either composed of a series of independent partial products, or is formed by a series of manipulations and processes intimately connected with each other, all of which, however, are successively applied to the same subject of labour.

We may use a famous example to illustrate each of these two fundamental forms of manufacture. Sir William Petty quoted watch-making, which belongs to the first of the fundamental forms of manufacture, to illustrate the division of labour in manufacture. The watch was originally the product of the labour of one worker, who manufactured it himself from start to finish. When watch-making became subject to the conditions of capitalist enterprise, the manufacture of each constituent part of the watch was assigned to a special detail worker, and likewise its putting together. Thus there were main-spring-makers, dial-makers, case-makers, pin-makers, pivot-makers, etc., and finally the repasseur, who puts the whole watch together and sets it going.

An example of the second fundamental form of manufacture has been given us by Adam Smith in his famous description of pin-making as carried on in his time. "One man draws out the wire," he says, "another straightens it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on is a peculiar

business; to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands" ("The Wealth of Nations," Chap. I.).

The single pin successively passes through the hands of various detail workers; but these workers are all busy at the same time. In a pin factory pins are simultaneously drawn, straightened, pierced, pointed, etc., in short, the various operations which the handicraft worker has to perform successively are performed simultaneously in the factory. It is thus possible to turn out more commodities in the same period. In manufacture a productive power is also gained as compared with handicraft, a gain which springs from its co-operative character. But a limitation still attaches to manufacture; whether it be the first kind, which we have illustrated by watch-making, or the second kind, for which we found an example in pin-making, the product or its constituent parts have to be transported from one hand to another, which involves time and labour. This limitation is only overcome in modern industry.

By means of this transport from one hand to another one worker supplies another with his raw material, one worker therefore employs another. Thus, for example, the worker who has to place the heads on the pins cannot do this unless a sufficient quantity of pins ready for this operation are supplied to him. If, therefore, the whole of the work is to proceed without interruption, the necessary labour-time for the production of a certain product in a branch of detail labour must be fixed, and a numerical proportion established among the workers employed in each of these branches. If, for instance, the pin-cutter can cut an average of 1,000 pins in an hour, while the

worker who puts the heads on can only finish 200 pins in the same time, two pin-cutters must be employed in order to keep 10 head-fixers busy. On the other hand, the capitalist who engages one pin-cutter must also employ five head-fixers, if he wishes to make the fullest use of the labour-power of the former. If he decides to extend his business, the number of additional workers he must engage is not an arbitrary one, if he wants to utilise their labour-power to the utmost. To keep to our example; if he employs another pin-cutter, he will only derive a corresponding advantage if he employs five, and not three or four, additional head-fixers.

The manufacture of a commodity in the labour-time socially necessary therefor is, as we know, a requirement of commodity production in general; it is enforced by competition. With the development of capitalist manufacture, however, the production of a specific quantity of products within the socially-necessary labour-time also becomes a technical necessity.

If the artisan works quicker or slower than is socially necessary, this affects the earnings from his work, but does not render the latter impossible. In capitalist manufacture the whole labour process comes to a standstill whenever production deviates from the rule in a branch of detail labour. But we have seen above that the simultaneous employment of a large number of workers upon the same work reduces their labour to average labour.

It is therefore not until production is conducted on capitalist lines that the individual commodity producer (the capitalist) produces as a rule with socially-necessary average labour, and must do so. It is only under the capitalist mode of production that the law of commodity value is in full operation.

With manufacture machines begin here and there to be employed; at this period, however, they only play a sub-

sidiary part. The principal apparatus of manufacture remains the body of detail workers, each of whom resembles a cog or wheel in a machine. Under the manufacturing system the worker is, in fact, only a part of a human machine which has to operate as steadily and systematically as a real machine. If the machine is composed of more or less complicated parts, the various detail processes require more or less skilled workers, whose labour-power consequently possesses more or less value. When pin-making was still carried on as a handicraft, the same degree of skill was required for each pin-maker, and consequently the value of the labour-power of each of them was on the whole the same and comparatively high. When pin-making was absorbed in the manufacturing system, it was split up into detail processes which required considerable practice and others which could be acquired with ease. The labour-power of those which required a long time in which to achieve the necessary facility had, of course, a much higher value than that of those which were easily mastered. Thus there arose "a hierarchy of labour-powers, which corresponded to a scale of wages."

The table on page 139, taken from Babbage ("On the Economy of Machinery and Manufacture," London, 1835), shows very clearly the hierarchical arrangement of the various rates of wages, and the technical necessity of adapting the number of workers to the nature of every process, and enforcing the average necessary labour-time. The table exhibits the conditions of a small English pin-maker at the beginning of the nineteenth century.

At the lowest rung of this ladder are those who perform tasks of which any person is capable without special experience and preparation. Such simple tasks occur in every production process; in handicraft they form a change from complicated activities; in manufacture they become the continuous and uninterrupted occupation of

Name of Process.	Workers.	Daily Wage.
		s. *d.*
Pin-drawer . . .	One man . .	3 3
Straightening the pin .	One woman . .	1 0
	One girl . .	0 6
Pointing . . .	One man . .	5 3
Preparing the heads .	One man . .	5 4½
	One boy . .	0 4½
Fitting the heads . .	One woman . .	1 3
Whitening . . .	One man . .	6 0
	One woman . .	3 0
Putting in paper . .	One woman . .	1 6

The wages therefore vary between 4½*d.* and 6*s.*

a special class of people, who are now distinguished as unskilled workers from skilled workers.

Almost every worker in manufacture has a shorter period of apprenticeship to undergo than that of the handicraftsman of the corresponding branch of industry. The latter has to learn all the processes that are necessary for the fabrication of the product of his business, while in the former case, each worker has to learn only one or a few of such processes. In the case of the unskilled worker, the expense of apprenticeship is entirely saved.

Thus the value of labour-power falls under the manufacturing system, and consequently the labour-time necessary for the maintenance of the worker falls. With an unaltered working-day, the duration of surplus-labour is prolonged, and the relative surplus-value increases.

But the worker is crippled physically and intellectually; his work loses all meaning and interest for him; he himself becomes an appendage of capital.

CHAPTER X

MACHINERY AND MODERN INDUSTRY

(1) *The Development of Machinery*

ALTHOUGH the division of labour in manufacture leads to a modification of handicraft labour, it does not abolish the latter. Dexterity in handicraft remains on the whole the foundation of manufacture, and enables the detail worker, in spite of his one-sided experience, to maintain a certain independence towards the capitalist. He cannot be replaced overnight, while his services are essential for the continuance of the whole business, as we have seen in the case of pin-making. And the workers are so well aware of this advantage that they all strive to retain this handicraft character in manufacture by maintaining as far as possible handicraft practices, such as the apprenticeship system.

These efforts may be observed even to-day in a whole series of industries which are still conducted upon manufacturing lines. In this consists the secret of many successes of the trade union movement.

One man's meat is another's poison. "Throughout the whole manufacturing period there runs the complaint of want of discipline among the workmen. And had we not the testimony of contemporary writers, the simple facts, that during the period between the sixteenth century and the epoch of Modern Industry, capital failed to become the master of the whole disposable working-time of the manufacturing labourers that manufactures are short-

lived, and change their locality from one country to another with the emigrating or immigrating workmen, these facts would speak volumes." One can therefore understand the lament uttered by the anonymous author of a pamphlet which was published in the year 1770. "The labouring people should never think themselves independent of their superiors. Order must in one way or another be established."

And order was established. Its preliminary condition was created by manufacture itself. It called into life the hierarchically organised workshop for the production of complicated instruments of labour, and "the product of the division of labour in manufacture produced in its turn —machines." The machine, however, gives the knock-out blow to the dominance of handicraft activity.

What is the difference between the machine and the instrument of handicraft? How is the instrument of labour transformed from a tool into a machine? The machine is "a mechanism that, after being set in motion, performs with its tools the same operations that were formerly done by the workman with similar tools." Whether the motive power is derived from man, or from some other machine, makes no difference in this respect. This should be clearly understood in view of the erroneous conception that the machine is distinguished from the tool by the fact that it is set in motion by a natural force other than that of man, such as animals, water, wind, etc. The employment of such motive forces is much, much older than machine production, we need only recall the drawing of the plough by oxen or horses. Animal, wind, and water power, etc., have been employed by men as motive forces from very early times, as in turning the crank of a mill and in pumping, without thereby effecting a revolution in the mode of production; even the steam engine, as invented at the end of the seventeenth century, produced no indus-

trial revolution. This was, however, the case when the first important tool machine, the "spinning machine," was invented. Nothing is more absurd than the fables about the discovery of steam power through the chance observation of a steaming kettle. The mechanical power of steam was probably known to the Greeks two thousand years ago, but they did not know what to do with it, and later it was utilised for all kinds of mechanical toys. But the invention of the steam engine was the product of a real, deliberate, intellectual endeavour, based upon previous attempts, and was not possible until manufacture had furnished the technical conditions, especially in the form of an adequate number of skilled mechanical workmen, for making it. Moreover, it was not possible until needs had aroused an interest in new motor forces. This was, however, the case when the labour machine was invented.

For its utilisation it required a stronger and more systematically-functioning driving force than any that had hitherto existed. Man is a very inadequate tool for uninterrupted and uniform movement, and, moreover, is too weak; the stronger horse is not only very expensive and only employable in the factory to a limited extent, but he also possesses the objectionable quality of sometimes taking his own head; the wind is too inconsistent and uncontrollable, and even water-power, which was used to a considerable extent during the manufacturing period, no longer sufficed, as it could not be increased at pleasure, and at certain seasons repeatedly dried up. Above all, it was confined to a locality. Only when James Watt, after many attempts, had invented his second so-called double-acting steam engine, after he had found, in the "extremely extensive" industrial establishment of his companion Matthew Boulton, "both the technical forces and the monetary resources" which he needed for the execution of his plans, only then was the motor discovered "that begot its own

force by the consumption of coal and water, whose power was entirely under man's control, that was mobile and a means of locomotion, that was urban and not, like the waterwheel, rural, that permitted production to be concentrated in towns instead of, like the water-wheels, being scattered up and down the country, that was of universal technical application" (Marx).

And now the perfected motor force reacts in its turn upon the ever extending development of the labour machine.

"All fully developed machinery consists of three essentially different parts, the motor mechanism, the transmitting mechanism, and finally the tool or working machine." The motor mechanism or driving force of the whole mechanism we have just considered. The transmitting mechanism, composed of fly-wheels, shafting, toothed wheels, pullies, straps, ropes, bands, pinions, and gearing of the most varied kinds, regulates the motion, changes its form where necessary, as, for instance, from linear to circular, and divides and distributes it among the working machines. "These first two parts of the whole mechanism are there solely for putting the working machines in motion, by means of which motion the subject of labour is seized upon and modified as desired." As already observed, the tool or working-machine is that part of the machinery with which the industrial revolution of the eighteenth century started. And to this day it constantly serves as such a starting point, whenever a handicraft, or a manufacture, is turned into an industry carried on by machinery. Either the entire machine is only a more or less altered mechanical edition of the old handicraft tool, as, for instance, the power-loom; or the working parts fitted in the frame of the machine are old acquaintances, as spindles in a mule, needles in a stocking-loom, and knives in a chopping-machine. But the number of

tools, which the same tool machine can set in motion simultaneously, is " from the very first emancipated from the organic limits that hedge in the tools of a handicraftsman."

As a motor mechanism, by means of a suitable arrangement of the transmitting mechanism, can set a whole series of working machines simultaneously in motion, the individual machine sinks into a mere factor in production by machinery. Where the product is entirely made by a single working machine, as in the case of the mechanical power-loom, in the workshop where machinery alone is used, that is, in the factory, we meet again with simple co-operation, inasmuch as, leaving the workmen out of account for the moment, there is a conglomeration in one place of similar and simultaneously acting machines. But there is here a technical oneness in the whole system, as all the machines simultaneously receive an equal impulse from the common motor mechanism. They are only organs of the motive mechanism.

A real machinery system, however, does not take the place of these independent machines, until the subject of labour goes through a connected series of detail processes, that are carried out by a chain of machines of various kinds, the one supplementing the other. Here we have again the co-operation by division of labour that characterises manufacture; only now, it is a combination of detail machines. Each detail machine supplies raw material to the machine next in order; and just as in manufacture, the direct co-operation of the detail labourers establishes a numerical proportion between the special groups, so in an organised system of machinery, where one detail machine is constantly kept employed by another, a fixed relation is established between their numbers, their size, and their speed. This combined working machinery becomes more and more perfect, the more the process as

a whole becomes a continuous one, *i.e.*, the less the raw material is interrupted in its passage from its first phase to its last and the more its passage from one stage of production to another is effected, not by human hands, but by the machinery itself. As soon as a machine executes, without man's help, all the movements requisite to elaborate the raw material, needing only attendance from him, we have an automatic system of machinery. That such a machine is susceptible to a constant improvement in detail is shown by the apparatus that stops the spinning machine whenever a sliver breaks. As an example, "both of continuity of production and of the carrying out of the automatic principle," says Marx, "we may take a modern paper mill."

Like the steam engine invented by Watt, the other early inventions in the province of machinery were only practicable because the manufacturing period had furnished a considerable number of skilled mechanical workmen, detail workmen in manufactures, independent handicraftsmen of various trades, who were able to construct machines. The first machines were created by handicraftsmen or in manufactures.

But so long as machines owed their existence to the personal skill and the personal strength of workers, who were still half artists, they were not only very dear—a circumstance that is ever present to the capitalist; the extension of their employment, and therefore the development of modern industry, were dependent on the growth of the class of machine constructors, whose trade required a long time to learn, and whose numbers could not be increased by leaps and bounds.

As soon as modern industry has reached a certain stage of development it becomes incompatible in a technical respect with its handicraft and manufacturing foundation. The progressive extension of the scope of machines, their

emancipation from the handicraft model which originally prevailed, the employment of more suitable or more refractory material, iron instead of wood for example, encountered the greatest difficulties, which could not be overcome even by the system of division of labour enforced in manufacture. "Such machines as the modern hydraulic press, the modern power-loom, and the modern carding engine, could never have been furnished by manufacture."

On the other hand, a transformation in one branch of industry involves a transformation in a series of connected branches of industry. Machine spinning makes machine weaving necessary, and the two together involve a mechanical-chemical revolution in bleaching, printing, and dyeing. Again, the revolution in the mode of production in industry and agriculture necessitates a transformation in the means of transport and communications. Modern industry with its feverish rapidity of production must be able to obtain its raw materials quickly, and to throw its products quickly and in great quantities on the market, it must be in the position to attract and to repel great masses of labour according to its requirements and so on.

This brings about a revolution in ship building, and the sailing vessel is supplanted by the steam ship, the coaching system by the railways, and express messengers by the telegraph. "But the huge masses of iron that had now to be welded, to be cut, to be bored, and to be shaped, demanded, on their part, cyclopean machines, for the construction of which the methods of the manufacturing period were utterly inadequate."

Thus modern industry had to create its own foundation, adapted to its nature, and it did so by mastering the machine, in order to produce machines therewith. "It was only through the tool machines that technology was able to solve the gigantic problem presented by machinery

construction" ("Book of Inventions"). For this purpose it was necessary to produce the geometrically accurate straight lines, planes, circles, cylinders, cones, and spheres, required in the detail parts of the machines. This problem Henry Maudsley solved in the first decade of this century by the invention of the slide rest, a tool that was soon made automatic, and in a modified form was applied to other constructive machines besides the lathe, for which it was originally intended. Thanks to this invention, it became possible to produce the forms of the individual parts of machinery "with a degree of ease, accuracy, and speed, that no accumulated experience of the hand of the most skilled workman could give."*

It is not necessary to dilate upon the great dimensions of the machinery employed in the construction of machines. Who has not heard of the gigantic works of our machine factories, of those powerful steam hammers, weighing more than two tons, for which the crushing of a block of granite is mere child's play, but which are also capable of executing the lightest movements, measured to a nicety? And every day brings fresh news of the progress of the machine system, of further extensions of its influence.

In manufacture the division of labour was largely of a subjective character, and the detail process was adapted to the personality of the workman. In the machine system, modern industry possesses an organism of production which is entirely objective, which confronts the worker in a finished state, and to which the latter must therefore subject himself. Co-operation, the supplanting of the isolated worker by the socialised worker, is no

* "The Industry of Nations," London, 1855, Part II., p. 239. From this book Marx quotes the following passage concerning the invention of the slide rest: "Simple and outwardly unimportant as this appendage to lathes may appear, it is not, we believe, averring too much to state that its influence in improving and extending the use of machinery has been as great as that produced by Watt's improvements of the steam engine itself."

longer accidental, but is "a technical necessity dictated by the instrument of labour itself."

(2) *The Value Transferred by Machinery to the Product.*

Like the simple tool, the machine is a part of constant capital. It creates no value, but only transfers its own value to the product, in the particular case, the value of the fraction used up in the process. While machinery enters as a whole into the labour process, it only enters by bits into the value-begetting process. The same thing happens in the case of the tool, but the difference between the original total value and the fractional value imparted to the product is far greater with the machine than with the tool. In the first place, it has a much longer life than the tool, as it is constructed of more durable material, and, secondly, in consequence of its control by strict scientific laws, it effects greater economies in the using up of its constituent parts, and in the consumption of auxiliary materials, oil, coal and so on, and finally its productive scope is incomparably greater than that of the tool.

Given the difference between the value of the machinery, and the value transferred by it in a day to the product, the extent to which this latter value makes the product dearer depends, in the first instance, upon the size of the product. In a lecture published in 1858, Mr. Baynes, of Blackburn, estimated that "each real mechanical horse-power * will drive 450 self-acting mule spindles with preparation, or 200 throstle spindles, or 15 looms for 40-inch cloth and so on." In the first case, it is the day's produce of 450 mule spindles, in the second, of 200 throstle spindles, in the third, of 15 power-looms, over which the

* Engels, the editor of the third and fourth editions of "Capital," observes: "A horse-power is equal to a force of 33,000 foot-pounds per minute, *i.e.*, to a force that raises 33,000 pounds one foot in a minute, or one pound 33,000 feet. This is the horse-power meant in the text."

daily cost of one horse-power and the wear and tear of the machinery set in motion by that power are spread, so that only a very minute value is transferred to a pound of yarn or a yard of cloth.

Given a machine's capacity for work, that is, the number of its operating tools, or, where it is a question of force, their mass, the amount of its product will depend on the velocity of its working parts.

Given the rate at which machinery transfers its value to the product, the amount of value so transferred depends on the total value of the machinery. The less labour it contains, the less value it imparts to the product. If its production costs as much labour as its employment would save, there is nothing but a transposition of labour, and no increase in the productivity of labour. The productiveness of a machine is measured by the extent to which it saves human labour-power. Consequently, it is no contradiction at all to the principle of machine production that, generally speaking, a comparison of commodities produced by handicrafts or manufactures with the same commodities produced by machinery shows that, in the product of machinery, the value due to the instruments of labour increases relatively, that is, relatively to the total value of the product, although it decreases absolutely.

The use of machinery for the exclusive purpose of cheapening the product is limited in this way, that less labour must be expended in producing the machinery than is displaced by the employment of that machinery. Now, as we have previously seen, capital does not pay for the labour expended, but only for the value of the labour-power expended; therefore, the limit to using a machine is fixed by the difference between the value of the machine and the value of the labour-power replaced by it.

Since the actual wage of the worker at one time sinks below the value of his labour-power, at another rises

above it, in various countries, at various times, and in various branches of industry, the difference between the price of the machinery and the price of labour-power which it replaces may vary considerably. It is only this difference that determines the cost, to the capitalist, of producing a commodity, and through the pressure of competition, influences his action. Hence it comes to pass that nowadays some machines which prove profitable in one country are not adopted in another. Stone-breaking machines were invented in North America, but were not adopted in the Old World, because there the proletarians who performed this labour were paid for such a small fraction of their work that machines would have increased the cost of production to the capitalists.

Low wages are an obstacle to the introduction of machines, and even from this standpoint a drawback to social development.

Only a society where the antagonism between capital and labour is abolished will afford full scope for the employment of machinery.

(3) *The Proximate Effects of Machinery on the Workman.*

"In so far as machinery dispenses with muscular powers, it becomes a means of employing labourers of slight muscular strength, and those whose bodily development is incomplete, but whose limbs are all the more supple. The mighty substitute for labour and labourers was forthwith changed into a means for increasing the number of wage-labourers by enrolling, under the direct sway of capital, every member of the workman's family, without distinction of age or sex." Compulsory work for the capitalist usurped the place, not only of the children's play, but also of free labour at home for the family. "The labour of women and children was the first thing sought for by capitalists who used machinery."

The effects of this were equally disastrous for the working class in economic, social, and moral respects.

So far the value of labour-power had been determined by the labour-time necessary for the maintenance, not only of the individual adult worker, but of the whole working-class family, whose breadwinner he was. Now, as wife and children were also drawn into the labour market and had the opportunity of earning, the value of the labour-power of the man came in time to be spread over his whole family. And to this movement in the value of labour-power is adapted with astonishing rapidity the corresponding movement in its price, that is, in wages. Instead of the father, the whole family must gradually work for wages in order to exist and to provide capital not only with labour, but with surplus labour. In this manner machinery not only increases the exploitable material, but also raises the degree of exploitation.

This does not, however, exclude the possibility of a certain nominal increase in the income of the workman's family. When, instead of the father, the father, mother, and two children work, the total wage is in most cases higher than the previous wage of the father alone. But the costs of maintenance have likewise increased. The machine signifies greater economies in the factory, but the machine industry puts an end to economies in the workman's household. The factory worker cannot be a housewife at the same time. Economy and care in the utilisation of food become impossible.

Previously the workman had sold his own labour-power, which was at his disposal as a free person, at least nominally. Now he becomes a slave dealer and sells wife and child to the factory. If the capitalist pharisee publicly denounces this "cruelty," he forgets that it is he himself who created it, exploits it, and seeks to perpetuate it under the beautiful title of "freedom of labour."

The cruelty of the working parents, however, is incompatible with the great fact that the limitation of female and child labour in the English factories was wrested from capital by the adult male workers.

Marx cites numerous testimonies in support of the shocking effects of the factory labour of women and children. We refer the reader to these, and would here quote an instance at a later date, from Singer's book "Investigations into the Social Conditions in the Factory Districts of North Eastern Bohemia" (Leipzig, 1885). The data in this book enables us to make a comparison between the mean infantile mortality in a country which was almost a stranger to modern industry, Norway, and the districts in which modern industry was highly developed, without at that time being restricted by labour protection legislation. We mean North Eastern Bohemia.

Between 1866 and 1874 the infantile mortality below the age of 1 year was 1,063 for every 10,000 viable births. On the other hand, the infantile mortality in respect of every 10,000 viable births was as follows in the highly industrial districts mentioned :—

	Below the age of one.
Hohenelbe	3,026
Gablonz	3,104
Braunau	3,236
Trautenau	3,475
Reichenberg	3,805
Friedland	4,130

The infantile mortality in the factory districts was therefore three to four times as great as in backward Norway. The great mortality in the former case cannot, as the Malthusians would have it, be ascribed to the excessive fertility of the population. The total number of births is rather an exceptionally small one. In the districts investigated by Singer, the birth rate per 1,000

inhabitants was not quite 35, whereas it was almost 42 for Germany, and over 40 for the whole of Austria.

In addition to the physical and moral deterioration, the transformation of undeveloped persons into mere machines for the fabrication of surplus-value induced a state of mind " clearly distinguishable from that natural ignorance which keeps the mind fallow without destroying its capacity for development, its natural fertility."

Yet the assembling of women and children to form a combined working *personnel*, brought about by machinery, has a beneficial effect : it eventually assists to break down the opposition which the male workers in manufacture are still offering to the despotism of capital.

What is the object of machinery, and why does the capitalist introduce machines ? To lighten the toil of his worker ? By no means. The object of machinery is to cheapen commodities through increasing the productivity of labour, and to shorten that portion of the working-day which the workman needs for the production of the value of his labour-time, for the benefit of that portion during which he creates surplus-value.

We have seen, however, that machinery is all the more productive the smaller the fraction of its own value which it imparts to a definite quantity of commodities. And this fraction is all the smaller the greater the mass of products which it creates, whereas this mass of products is all the greater the longer the period during which the machine is running. Is it therefore a matter of indifference to the capitalist whether this " working-period " of his machinery is distributed over 15 years, running 8 hours daily, or over 7½ years, running 16 hours daily ? Mathematically the period of usage is the same in both cases. But our capitalist reckons differently.

He says to himself in the first place : By running 16 hours daily for 7½ years the machine does not impart any

more value to the total product than by running 8 hours daily for 15 years. On the other hand, in the former case it reproduces its value twice as fast as in the latter, and places me in the pleasant position of being able to pocket as much surplus-value in $7\frac{1}{2}$ years as I otherwise could in 15 years—apart from other advantages which the prolongation of the working-day involves.

Further: My machine does not merely wear out by being used, but also when it stands still, and is therefore exposed to the influence of the elements.

Resting is rusting. This latter species of wear and tear is pure loss, which I can avoid in the degree that I curtail the period of idleness.

Again: In our age of continual technical revolutions, I must daily be prepared for the fact that my machine will be depreciated by some competitor that is more cheaply produced or represents a technical improvement. Consequently, the quicker I can replace its value, the slighter will be the danger of this fatality.

In passing, this danger is the greatest during the first introduction of machinery into any branch of production; here the new methods follow hot foot upon each other. In such circumstances, the attempts to prolong the working-day are more resolute than elsewhere.

Our capitalist continues: My machines, my buildings and so on represent a capital of so many pounds. If the former stand still, my whole capital lies idle and useless; therefore, the longer they are running, the sooner I shall get my value out of them and also out of that portion of my capital invested in buildings, etc.

To these considerations of the capitalist is to be added a motive of which he is at least as unconscious as his advocate, the political economist, but which is very powerful. The capitalist procures his machines in order to save wages (variable capital), so that henceforth one

worker will create in an hour as many commodities as previously in three or four.

The machine increases the productivity of labour, and thereby enables surplus-labour to be extended at the expense of necessary labour, thus raising the rate of surplus-value. But it can only achieve this result by diminishing the number of workers employed by a given amount of capital. Machine industry converts a portion of capital which was previously variable, that is, was expended upon living labour-power, into machinery, that is, into constant capital.

We know, however, that the mass of surplus-value is determined in the first place by the rate of surplus-value, and, secondly, by the number of workers employed. With the introduction of machinery in capitalist modern industry, it is sought to increase the first factor, the mass of surplus-value, through the diminution of the second. Hence the application of machinery to the production of surplus-value implies an immanent contradiction. This contradiction drives capital to excessive lengthening of the working day, in order that the decrease in the relative number of labourers exploited may be compensated by an increase not only of the relative, but also of the absolute surplus-labour.

The capitalist employment of machinery therefore creates a series of new and powerful motives for the excessive prolongation of the working-day. But it also increases the opportunities for its prolongation. As the machine functions continuously, in its efforts to prolong the working day, capital has only to reckon with the limits imposed by the natural fatigue of the attendant upon the machine, that is, of the worker, and with his opposition. The latter is broken down both by attracting to production the more pliable female and child elements, and by the creation of a "redundant" labouring population, consisting of the

workers set free by the machines. In this manner the machine throws to the winds all the moral and natural limitations of the working day, and, in spite of its being "the most powerful instrument for shortening labour-time," it becomes an unfailing means for placing every moment of the worker's time and that of his family at the disposal of the capitalist for the purpose of expanding the value of his capital.

Marx concludes the section in which he demonstrates the foregoing with the following words: "'If,' dreamed Aristotle, the greatest thinker of antiquity, 'if every tool, when summoned or even of its own accord, could do the work that befits it, just as the creations of Dædalus moved of themselves, or the tripods of Hephæstus went of their own accord to their sacred work, if the weavers' shuttles were to weave of themselves, then there would be no need either of apprentices for the master workers, or of slaves for their lords.' And Antiparos, a Greek poet of the time of Cicero, hailed the invention of the water wheel for grinding corn, an invention that is the elementary form of all machinery, as the giver of freedom to female slaves, and the bringer back of the golden age. Oh! these heathens! they understood, as the learned Bastiat and before him the still wiser MacCulloch have discovered, nothing of political economy and Christianity. They did not, for example, comprehend that machinery is the surest means of lengthening the working day. They perhaps excused the slavery of one on the ground that it was a means to the full development of another. But to preach slavery of the masses, in order that a few crude and half-educated parvenus might become 'eminent spinners,' 'extensive sausage makers,' and 'influential shoe black dealers,' to do this, they lacked the bump of Christianity."

The more the machine system, and with it a special class of experienced workmen habituated to the use of

machinery, developed, the more the velocity and with it the intensity of labour increased as a natural consequence. This heightened intensity of labour, however, is only possible so long as the working-day is not extended beyond a certain limit, just as at a certain stage of development an increase in the intensity of labour is only possible with a corresponding shortening of the working day. When it is a question of work repeated day after day with unvarying uniformity, Nature imperatively commands: thus far and no farther.

In the first period of factory industry the prolongation of the working-day and the growing intensity of labour went hand in hand in England. So soon, however, as the legal restriction of the working day, enforced by the indignant working class, deprived capital of the opportunity for securing an increased production of surplus-value by the first way, it bent all its energies to obtaining the desired result by an accelerated development of the machine system and greater economies in the production process.

Previously the method of producing relative surplus-value had generally consisted in permitting the worker, through the increased productivity of labour, to produce more in the same time with the same expenditure of labour. Now the aim was to obtain a greater quantity of products by an augmented expenditure of labour in the same time. The shortening of the working-day resulted in increasing the tension of the labour-power of the worker, in a "closer filling up of the pores of the working-day," that is, in a greater condensation of work. He had to do more work in an hour of the 10-hour working-day than formerly in an hour of the 12-hour working-day. A greater mass of labour was compressed within a given period.

We have already indicated the two methods whereby

this result can be obtained: greater economy in the labour process and accelerated development of the machine system. In the first case, capital takes care, by employing a mode of remuneration (especially piece wages, to which we shall return later), that the worker exerts more labour-power in the shorter working-day than formerly. The regularity, uniformity, order, and pace of work are increased. Even where capital cannot employ the second means, that is, cannot squeeze more work out of the worker through the increased velocity of the circulation of the driving machine or extension of the scope of the machine requiring attendance, even there results are obtained in this connection which give the lie to all the doubts that have previously been raised. On almost every occasion when the working-day is shortened, the manufacturers declare that work is so carefully supervised in their establishments, and their workers are so much on the alert, that it would be absurd to expect any considerable result from tightening the screws. And these curtailments are barely carried out before the same manufacturers are obliged to admit that in the shorter working time their workers not only perform as much, but sometimes even more, work than previously in the longer working time, even with the same instruments of labour. The same reasoning applies to the perfection of machinery. Often as it is declared that we have reached the limits of what can be attained for a long time, just as often are these limits overstepped within a short time.

So strong is the intensification of the labour of the worker under a shortened working-day that the English factory inspectors, although "they were never tired of praising the favourable results of the Factory Acts of 1844 and 1850," admitted in the 'sixties that the shortening of the working day had already produced a result which was undermining the workers' health.

Those who believe that the introduction of a normal working-day will establish harmony between capital and labour are suffering from a great delusion.

"There cannot be the slightest doubt," states Marx, "that the tendency, that urges capital, so soon as a prolongation of the hours of labour is once for all forbidden, to compensate itself by a systematic heightening of the intensity of labour, and to convert every improvement in machinery into a more perfect means of exhausting the workman, must soon lead to a state of things in which a reduction in the hours of labour will again be inevitable."

Where the 10-hour normal working-day was introduced, the efforts of the manufacturers above indicated rendered the 8-hour working-day necessary within a measurable period of time.

In our view, this is an argument for, not against, the normal working day. Like every genuine social reform, its effects are not confined to its immediate sphere of influence. It is an element in the further development, not in the stagnation, of society.

(4) *The Machine as "Educator" of the Worker.*

So far we have spoken of the effects of the introduction of machinery which are primarily of an economic nature; let us now glance at the direct moral effects of machinery upon the workers.

If we compare a modern production establishment driven by machinery, that is, a factory, with a manufacturing or handicraft business, the first thing that strikes us is that, whereas in manufacture and handicraft the worker uses the tool, in the factory it is he who serves the machine; he is the "living appendage" of a dead mechanism existing independently of him. The "philosopher," or, as Marx calls him, the Pindar of the machine system, Dr. Andrew Ure, describes the modern factory as a "vast

automaton, composed of various mechanical and intellectual organs, acting in uninterrupted concert for the production of a common object, all of them being subordinate to a self-regulated moving force." In another place he speaks of the "benignant power of steam." Behind this "benignant power" is, of course, its user, the capitalist, who is benignant only to himself.

Besides the multitude of workers and their assistants attached to the operating machines, we find in every factory a small staff whose duty it is to control and keep in order the whole of the machinery. This trained class of workers, who are partly scientific (engineers) and partly tradesmen (mechanics, joiners, and so on), are outside the category of the factory workers, and do not therefore concern us here. Nor are we concerned with the attendants, whose simple services can easily be replaced by machinery (which has everywhere been shown to be the case where Factory Acts have excluded the cheapest of these attendants, the children, from the factory).

We are dealing with the factory worker proper, the worker attached to the operating machine.

Along with his former tools (needle, spindle, chisel) the skill of the worker in handling them passes over to the machine. He needs now only one kind of skill, that of adapting his own movements to the uninterrupted uniformity of the machine. This skill is most rapidly acquired in youth. The worker must begin work early, the manufacturer is no longer dependent on a class of workers exclusively brought up to machinery work; among the working-class children who are growing up he finds a substitute who can be quickly trained.

In his "Philosophy of Poverty" Proudhon describes the machine as a "protest of the genius of industry against mutilating and murderous toil," the "rehabilitation of the worker." Although machinery actually throws over-

board the old system of division of labour, with its technical pre-requisites, we find this system is still continued in the factory, and even in a more degrading form. It is true that the worker no longer uses a detail tool during the whole of his life. Instead, machinery is abused, in the interest of increased exploitation, for the purpose of transforming the worker, from his very childhood, into a part of a detail-machine, and thus his helpless dependence upon the factory as a whole, and therefore upon the capitalist, is rendered complete. His work is denuded of all intellectual interest, and becomes a mechanical and nerve-racking torture. His special skill is reduced to an infinitesimal quantity before the science, the gigantic physical forces and the mass of social labour that are embodied in the factory mechanism. And just as he has to submit involuntarily to the automatic pace of the machinery, so he must submit to the discipline imposed by the factory owner.

Whatever may be the form of social organisation, this co-operation on a large scale and the employment of common labour instruments, especially machinery, will always involve a regulation of the labour process which makes it independent of the caprice of the individual participant. If we are not to renounce the advantages of machinery, the introduction of a discipline to which all have to submit is essential.

But there is discipline and discipline. In a free community, where it applies to everybody, it oppresses nobody; when compulsorily imposed for the advantage of a few it is called slavery, and is only tolerated with the greatest reluctance, after all opposition has proved to be futile. Consequently, many stubborn struggles were necessary before the opposition of the workers to the servitude to which the machines condemned them was broken down. In the book already mentioned, Ure points

out that long before Arkwright, Wyatt had invented an automatic shuttle, and the chief difficulty did not consist so much in the invention of a self-acting mechanism as in the compilation and enforcement of a code of discipline corresponding to the requirements of the automatic system! Consequently, the "noble" barber Arkwright deserved a laurel for having carried out this undertaking "worthy of a Hercules."

The code of discipline of the modern capitalist knows nothing of the constitutional system of the "division of powers" so dear to the bourgeois, or of the representative system, which is still dearer to him, but it is the expression of the absolute rule of the employer over his workers.

"The place of the slave driver's lash," says Marx, "is taken by the overlooker's book of penalties. All punishments naturally resolve themselves into fines and deductions from wages, and the law-giving talent of the factory Lycurgus so arranges matters, that a violation of his laws is, if possible, more profitable to him than the keeping of them."

Thus were the pride and independence of the worker broken. Moreover, he is physically crippled in consequence of the perpetual, one-sided, muscular activity, poisoned by the bad factory air, and deafened by the noise that goes on during the work—such is the elevating educational effect of machinery.

We have just spoken of the opposition offered by the worker to the introduction of machinery. In this connection, the feeling that the machine gives the worker's freedom its death blow is rather instinctive than otherwise; in the first place, opposition was offered to the machine as a means for rendering human labour superfluous. From this standpoint, even the ribbon-loom, which was supposed to have first been invented in Dantzig in the middle of the sixteenth century, was suppressed by the local Town Council, and was later forbidden in Bavaria, in Cologne,

and in 1685 by Imperial edict throughout the whole of Germany. The revolts of the English workers against the introduction of machines lasted into the nineteenth century, and the same phenomenon was repeated in other countries. In France it occurred in the eighteen-thirties, and in Germany as late as 1848.

It is very cheap to indulge in pharisaic laments over this crude method of attempting to stem the greatest advance of modern times, but in actual fact the machine appeared everywhere in the first place as the enemy of the worker and designed to supplant him. During the period of manufacture, it was the positive side of the division of labour and co-operation in the workshop that was more emphasised, the fact that they rendered the workers employed more productive, but the machine appeared immediately as the worker's competitor. The workers displaced had to seek consolation in the fact that their sufferings were only temporary, and that the machine could only gradually conquer a whole field of production, thus diminishing the area and intensity of its destructive effect. "The one consolation," answers Marx, "cancels the other." In the latter case, it caused chronic poverty among the section of workers competing with it, but where the change was rapid, its effect was widespread and acute.

"History discloses no tragedy more horrible than the gradual extinction of the English handloom weavers, an extinction that was spread over several decades, and finally sealed in 1838. Many of them died of starvation, many with families vegetated for a long time on 2½*d.* a day. On the other hand, the English cotton machinery produced an acute effect on India. The Governor-General reported 1834–35: 'The misery hardly finds a parallel in the history of commerce. The bones of the cotton-weavers are bleaching the plains of India.' No doubt," adds Marx with bitter sarcasm, "in turning them out of this 'temporal' world, the machinery caused them no more than a 'temporary inconvenience.'"

The instrument of labour slew the labourer. This is most palpably the case where newly introduced machinery competes with surviving handicraft or manufacturing businesses. But within modern industry the continual improvement of machinery is aiming at the same result. In support of this contention, Marx quotes abundant testimony from the reports of the English factory inspectors, which we do not need to elaborate here, as the fact itself cannot be denied.

Let us rather turn from the machine as the competitor, to the machine as the "educator" of the workman. The many "vices" to which the working class is demonstrably inclined, according to the opinion of its capitalist friends, have no more effective opponent than the machine. It is the most powerful engine in the struggle of capital against the workers when the latter resist the former's autocracy, when they are not contented with the wages which are paid them, with the labour time imposed on them, when they dare to rebel by means of strikes and so on. "It would be possible," says Marx, "to write quite a history of the inventions, made since 1830, for the sole purpose of supplying capital with weapons against the revolts of the working class."

As, however, each fresh application of the "resources of science" to industry, that is the development of machinery, represents desirable progress, it seems as if the workers were imbued with these vices for the specific purpose of forming involuntary agents of progress. And so we see how everything is ultimately for the best in the capitalist world, even the vices of the workers.

(5) *The Machine and the Labour Market*

That the machine supplants labour is a fact which cannot be denied, although it is very unpleasant for those who perceive the best of all worlds in the existing mode of

production. Consequently, numerous attempts have been made to conceal the unpleasant fact.

For example, a number of political economists contend that all machinery which supplants labour necessarily liberates a corresponding amount of capital for the employment of these workers. This capital is supposed to have been the means of life which the workers would have consumed had they remained in work! Which is to say that the means of life set free through the dismissal of workers feel a need to procure employment for the latter in order to be consumed by them.

But the means of life which the worker buys for his own consumption do not confront him, in reality, as capital, but as simple commodities. What confronts him as capital is money, for which he sells his labour-power. This money is not set free by the introduction of machinery; it is rather employed to procure machines and is thus locked up. The introduction of machinery does not set free the whole of the variable capital which served for the remuneration of the workers whom it supplants, but transforms it at least partly into constant capital. The introduction of machinery means, therefore, an increase in the constant and a decrease in the variable capital, provided the amount of capital employed remains unaltered.

An example will make this clear.

A capitalist employs a capital of £10,000, of which £5,000 is used as variable capital. He employs 500 workers. He introduces machinery which renders it possible to produce the same product with 200 instead of 500 workers. The machine costs £2,500.

Previously the capitalist employed a variable capital of £5,000 and a constant capital of a similar amount. Now he employs a constant capital of £7,500, and a variable capital of only £2,000. Only £500 is set free, which, however, will not serve to employ 300 workers, but scarcely

10 workers, if employed under the same circumstances as the larger sum. For £400 out of the £500 must be set aside to procure the machines and so on, and only about £100 would remain free for variable capital.

It is obvious that no corresponding sum of capital is set free.

The theory that the machine sets free a corresponding sum of capital at the same time as it sets free the worker has been demonstrated by Marx as unfounded.

Marx contended that the machine diminishes the number of workers employed in proportion to the amount of the capital outlay, that with the development of the machinery system, the variable capital decreases while the constant capital increases. In spite of the introduction, the extension, or the improvement of machines, the variable capital, the number of workers employed in a branch of labour, may, however, increase at the same time, provided the total capital expenditure be sufficiently augmented. The growth of production presupposes, of course, a corresponding extension in the market for the products. This highly important factor cannot, however, be discussed more fully here. If the number of employed workers in such case does not diminish, this is not to be ascribed to the setting free of capital by the machine, but to the influx of new working capital. The tendency of the machine to throw workers out of work is thereby checked and temporarily neutralised, although it is not removed ; it again becomes manifest, and the relative decrease in the number of workers becomes an absolute one, as soon as the influx of fresh working capital slackens and falls below a certain level.

To make this point clear, let us revert to our previous example. We had a capital of £10,000, of which £5,000 was variable capital, serving to employ 500 workers. The introduction of a new machine increases the amount of

constant capital to £7,900, while it decreases the amount of the variable to £2,100, and the number of employed workers to 210.

But let us assume that fresh capital amounting to £20,000 is simultaneously put into the undertaking. It is correspondingly extended; in this case the number of workers employed is increased to 630, or 130 more than previously. If the machine had not been introduced, the trebling of the capital would, of course, have trebled the number of workers employed, from 500 to 1,500.

But if the machine always brings about a relative, sometimes an absolute, decrease in the number of workers employed in the branch of labour into which it is introduced, it may simultaneously cause an increase in the number of workers in another branch of labour, upon which the first branch reacts.

The machine calls a new kind of work into existence, that of the engineer.

The introduction of the machine into a branch of industry results in an increase in the total amount of products which this branch produces. This causes a corresponding increase in the quantity of raw material, and therefore, other circumstances being equal, an increase in the number of workers engaged in its production. If a machine is introduced which spins 1,000 yards of yarn, perhaps with fewer workers, as quickly as 100 yards of yarn was for merly spun, the number of spinners may possibly decrease, but at the same time there will be an increase in the number of workers in the cotton plantations. The development of spinning machinery in England was the principal reason for the increase in the number of negro slaves in the United States.

If yarn is cheaper, the weaver, who we assume is still a hand weaver, can produce more without any greater

outlay on raw materials, his income grows, and more persons are attracted to weaving.

"When machinery is applied to any of the preliminary or intermediate stages through which the subject of labour has to pass on its way to completion, there is an increased demand for labour in the handicrafts or manufactures supplied by the produce of the machines."

With the development of the machinery system there is a growth in the surplus-value and the mass of products in which it is embodied. This is accompanied by increased luxury for the capitalist class and its appendages. The demand grows for workers in luxury trades, servants, lackeys, and so on. In 1861 the textile industry in England employed 642,607 persons, while the servant class numbered 1,208,648.

Besides these factors, owing to which the introduction of machinery is followed by an increase in the demand for labour, Marx mentions another: the emergence of new fields of labour, such as gasworks, railways, and so on.

Of course, when Marx investigated the ways in which the introduction of machinery could bring about an increase in the demand for labour, he did not do so with the idea of minimising the sufferings inflicted on the labouring population by the factory system. The factory destroys the worker's family life, robs him of youth, increases his labour and denudes it of all interest, ruins him physically and intellectually, and makes him the involuntary tool of the capitalist—while the bourgeois economists think they have glorified the capitalist employment of machinery when they prove that it increases the number of wage workers in the factories.

As if this growth were not a growth of poverty! And the poverty of work is accompanied by a growth in the poverty of unemployment.

Variable capital may increase absolutely with the progress of the machinery system, but it does not do so as a matter of necessity ; in various branches of modern industry, by the side of an increase in the constant capital, an absolute decrease in the variable capital, a decline in the number of workers employed, has been detected at various times. (We give a number of relevant facts in the chapter upon over-population in the third part.) We ignore here the unemployment and the poverty produced by the competition of modern industry with corresponding branches of labour at home and abroad carried on by handicraft. It will be remembered what was said in a previous paragraph concerning the hand weavers in England and the East Indies, hundreds of thousands of whom starved, while the number of English machine weavers increased by several thousands. The vulgar economists who set out to convince the worker that the machine creates new employment for the workers who are set free perceived these thousands of fresh workers, but were discreetly silent about the hundreds of thousands set free.

Even if an increased demand for labour in another branch of industry makes itself felt simultaneously with the setting free of workers in one branch, this is but a poor consolation to the unemployed. Can a worker who has been engaged in one particular branch of labour all his life suddenly jump into another ?

Besides the movement in the labour movement which proceeds to the disadvantage of variable capital, owing to the continual alteration in the ratio of constant to variable capital, modern industry develops another peculiar tendency in the labour market, which runs counter to the former.

As soon as the general conditions of production appropriate to modern industry are established, as soon as machine production, coal and iron mining, the transport

system and the like have reached a certain stage of development, this mode of business shows itself capable of an incredibly rapid extension, which only finds limits in the supplies of raw materials and the markets for its products.

Hence the continual and feverish incentive to open up new markets to furnish fresh raw materials and fresh buyers for the manufactures. Every important extension of the market is followed by a period of feverish production, until the market is surfeited, whereupon a period of stagnation ensues: "The life of modern industry becomes a series of periods of moderate activity, prosperity, overproduction, crises and stagnation."

For the worker this cycle constitutes a perpetual fluctuation between overwork and unemployment, complete insecurity of employment, rate of wages, and generally of his condition of life.

This movement is complicated by the relative, and frequently absolute, decrease of variable capital which is effected by technical progress. Sometimes these tendencies conflict with one another—in a period of prosperity, when technical progress sets limits to the demands of the workers; sometimes they work together in the same direction, in a period of crisis, when, simultaneously with unemployment, competition is most unbridled, the pressure to reduce prices is strongest, this reduction being effected partly by the introduction of new labour-saving machines, partly by the prolongation of working time, partly by the reduction of wages, but always at the cost of the worker.

(6) *The Machine as a Revolutionary Agent.*

If one described the factory system to an apostle of harmony and then asked him if he still believed that we lived in the best of all worlds, he would generally try to

evade the answer to this question by declaring that we were still living in a state of transition. The blessings of capitalist modern industry could not be properly appreciated because of the mediæval *débris* which prevented their development. But let the condition of the workers in the factories be compared with that of the workers in corresponding domestic or handicraft businesses, and it would be found that the former were much better off than the latter, and that consequently modern industry had substantially improved, and not deteriorated, the condition of the workers.

It is undeniable that where modern industrial enterprise gained a footing in the traditional domestic trades, handicrafts, or manufactures, the workers in the latter existed under more miserable conditions than prevailed in the factories. Is this an argument for capitalist modern industry? We hardly think so. The simple testimony of the facts is that the factory system, in the branches of business where it gained a footing, not only worsened the condition of the workers who were drawn into the factories, but also that of the workers who continued to work outside the factories; indeed, the latter became worse off than the former. The "progress" brought about by capitalist modern industry consisted in the fact that the torments and privations imposed on the factory workers were visited doubly and trebly on the workers in domestic industry, handicraft and manufactures.

"The exploitation of cheap and immature labour-power is carried out in a more shameless manner in modern manufacture than in the factory proper. This is because the technical foundation of the factory system, namely, the substitution of machines for muscular power, is almost entirely absent in manufacture, and at the same time women and over-young children are subjected, in a most unconscionable way, to the influence of poisonous or injurious substances. This exploitation is more shameless in

the so-called domestic industry than in manufactures, and that because the power of resistance in the labourers decreases with their dissemination; because a whole series of plundering parasites insinuate themselves between the employer and the workman; because a domestic industry has always to compete either with the factory system, or with manufacturing in the same branch of production; because poverty robs the workman of the conditions most essential to his labour, of space, light and ventilation; because employment becomes more and more irregular; and, finally, because in these the last resorts of the masses made 'redundant' by modern industry and agriculture, competition for work attains its maximum. Economy in the means of production, first systematically carried out in the factory system, and there, from the very beginning, coincident with the most reckless squandering of labour-power, and robbery of the conditions normally requisite for labour—this economy now shows its antagonistic and murderous side more and more in a given branch of industry, the less the social productive power of labour and the technical basis for a combination of processes are developed in that branch."

The workers in domestic industry have to endure all that a person can endure without collapsing on the spot. In the attempt to compete with the machine as regards cheapness, their requirements of food, clothing, light, air, and rest shrink until a level is reached beyond which the most fearsome imagination cannot penetrate. Marx refers to lace schools, in which children of two years were employed. In English straw-plaiting children from three years of age worked sometimes until midnight in narrow rooms, in many of which only 12 to 17 cubic feet were allotted to each person. "The smaller of these numbers," says Mr. White, one of the Commissioners for the Investigation of Child Labour, "represents less space than the half of what a child would occupy if packed in a box measuring 3 feet in each direction."

However much human nature can put up with without

immediately succumbing, there are still limits beyond which it cannot be forced. When these are reached, domestic industry is doomed to rapid decay in consequence of the introduction of machinery; the home workers have either to find other employment, or they starve more rapidly than before. The same remark applies to surviving handicrafts and manufacture.

The transition from manufacture to modern industry is accelerated by the introduction of factory legislation. Domestic industry loses its foothold immediately it is made subject to legal restrictions. Its existence can only be prolonged by the unrestricted and most far-reaching exploitation of the labour-power of women and children.

If the machine effects such a complete transformation in all spheres of industry which it invades, it is almost equally revolutionary when it is applied to agriculture. Here it generally makes the worker, not merely relatively, but absolutely redundant, except in those cases where a very large increase in the land under cultivation simultaneously takes place, as was the case with the United States, for example.

Where the machine penetrates into agriculture, the peasant is threatened with the same fate that overtakes the surviving handicrafts in industry. With his disappearance, the strongest bulwark of the old society is dislodged. The peasants and wage workers who become " redundant " on the countryside flock to the towns. The great towns grow enormously, while the countryside is depopulated. The concentration of immense masses of people in the towns produces physical maladies among the industrial workers. The isolation of the countryside lessens the intellectual stimulations of the land workers, destroys their mental life, breaks down their resistance to capital. The great towns exercise an injurious effect on the fertility of the soil, inasmuch as those elements of the soil which

are consumed by man in the form of food are not returned to the soil, but in the form of excrement spread disease in the towns, instead of fertilising the soil. But with the application of modern technology to agriculture, means are multiplied of extracting the utmost yield from the soil. Ever more is taken out of it, ever less is given back to it. Thus the capitalist application of machinery develops simultaneously with the robbery both of human labour-power and the soil. The earth is devastated, and the labourer falls into physical and intellectual decay.

But there is growing at the same time the nucleus of a new and higher civilisation and the forces which will assist it to blossom forth. Marx perceived in poverty not only poverty, but also the nucleus of a better future which is hidden in its womb. He does not condemn the factory system, he does not impeach it, but he endeavours to explain it. He does not moralise ; he investigates. And in this connection he himself refers us to his predecessor who was the first to recognise the revolutionary side of the modern factory system, to Robert Owen.

Modern industry has created fearful poverty, such as no other preceding mode of production. But the poverty of the masses is not stagnant. We do not find to-day the standing morass of poverty in which a society slowly and imperceptibly sinks, as with Roman society in the Imperial Age. The modern mode of production resembles rather a whirlpool which sucks up all sections of society, commingles them, and keeps them in constant motion. All the traditional relations of production are destroyed, and with them the traditional prejudices. Now the new relations of production which take their place are not themselves permanent, but are subject to constant change. One invention, one method of labour, ousts another, masses of capital and masses of workers are ceaselessly tossed from one branch of production to

another, from one country to another, all permanence of conditions and all belief in their permanency disappear. The conservative elements are removed, the peasant is forced into the great towns, where the historical driving force is to-day concentrated, and where he assists to increase the impetus of the movement instead of retarding it. Women and children are drafted into the factories, the conservative element of bourgeois family life is dissolved, and the sustaining and preserving housewife becomes an acquisitive wage worker battling for her existence.

And amidst this complete dissolution of the old that is proceeding before our eyes we already perceive the nucleus of the new.

The increasing stupefaction of the working class youth in consequence of the excessively long one-sided work compelled the authorities in all industrial States to declare elementary education in one or another form to be a condition of employment. It has since been found that the factory children learn rather better and more easily than the regular day pupils.

"This can be accounted for by the simple fact," said a factory inspector, "that, with only being at school for one-half of the day, they are always fresh, and nearly always ready and willing to receive instruction. The system on which they work, half manual labour, and half school, renders each employment a rest and a relief to the other; consequently both are far more congenial to the child than would be the case were he kept constantly at one." Marx adds: "From the factory system budded, as Robert Owen has shown us in detail, the germ of the education of the future, an education that will, in the case of every child over a certain age, combine productive labour with instruction and gymnastics, not only as one of the methods of adding to the efficiency of production, but as the only method of producing fully developed human beings."

To this educational revolution, another transformation must be added. The ramified division of labour in society into separate callings and special departments, which already characterised the period of handicraft, and the division of labour within the individual businesses, which was a feature of manufactures, had extremely unfavourable consequences for the labouring person.

The conditions of production developed slowly, and sometimes ossified into routine, the whole person was therefore chained to a certain detail operation for the whole of his life, in which he acquired immense skill, the while he was stunted on one side, and that harmonious development was lacking which imparted its ideal beauty to classical antiquity.

In the branches which it invades, the machine obviates the necessity for long years of assiduous exercise on the part of the worker in order to fit him for productive achievements in his specific department. It also makes it equally impossible for a person to be chained to a particular detail operation for the whole of his life, as it constantly transforms the conditions of production, ejects the worker from one branch of labour and tosses him into another.

But what sufferings are not brought about by this constant movement where hundreds of thousands of workers form an unemployed reserve army, eager to seize any employment that is offered them! And how slight has become the capacity for adaptation to the most varied activities in the case of wage workers who in youth have been equally crippled in body and mind, who lack insight into the various mechanical and technical processes with which modern large-scale production achieves its effects, and who are without the elasticity to adapt themselves to these various processes. And finally, if the worker in modern industry is not necessarily chained all his life to

a special detail function, he has to reckon every day, every month, and every year with the interruption of unemployment and hunger. How different it would be if the various detail functions were daily, even hourly, changed, so that they would not stupefy and fatigue, but stimulate and exhilarate, if the corroding unemployment disappeared and the technical changes were not made at the expense of the worker.

Among the many preliminary conditions for this alteration is the educational. The working class should receive scientific instruction in the functioning of the methods of production, and practical instruction in the handling of the most various instruments of production. Attempts in this direction are already being made in technical schools and similar institutions, but in an extremely inadequate manner.

"Though the Factory Act, that first and meagre concession wrung from capital, is limited to combining elementary education with work in the factory, there can be no doubt that when the working class comes into power, as inevitably it must, technical instruction, both theoretical and practical, will take its proper place in the working-class schools."

Finally, what change does modern large-scale industry portend with regard to the family? As far as the wage worker is concerned, the traditional form of the family has already been dissolved. Not only the relation between husband and wife, but also that between parents and children has been transformed through the system of industrial female and child labour. From protectors and cherishers, parents have often become exploiters of the children. We have before referred to the poor children in the English straw-plaiting industry, who were often obliged to work until midnight under the most wretched conditions from the age of three upwards.

"The wretched, half-starved parents of these small straw-plaiters," says Marx, "think of nothing but getting as much as possible out of their children. The latter, as soon as they are grown up, do not care a farthing, and naturally so, for their parents, and leave them." "It was not, however, the misuse of parental authority," says Marx in another place, "that created the capitalistic exploitation, whether direct or indirect, of children's labour; but, on the contrary, it was the capitalistic mode of exploitation which, by sweeping away the economical basis of parental authority, made its exercise degenerate into a mischievous misuse of power. However terrible and disgusting the dissolution, under the capitalist system, of the old family ties may appear, nevertheless, modern industry, by assigning as it does an important part in the process of production, outside the domestic sphere, to women, to young persons, and to children of both sexes, creates a new economical foundation for a higher form of the family and of the relations between the sexes. It is, of course, just as absurd to hold the Teutonic-christian form of the family to be absolute and final as it would be to apply that character to the ancient Roman, the ancient Greek, or the Eastern forms which, moreover, taken together, form a series in historic development. Moreover, it is obvious that the fact of the collective working group being composed of individuals of both sexes and all ages, must necessarily, under suitable conditions, become a source of humane development; although in its spontaneously developed, brutal, capitalistic form, where the labourer exists for the process of production, and not the process of production for the labourer, that fact is a pestiferous source of corruption and slavery."

After Marx has afforded us this glimpse into the future, we may regard the system of machinery and modern industry with some complacency. Boundless as are the sufferings which have been inflicted on the working class, they have at least not been in vain. We know that from the field of labour, which has been fertilised with millions of proletarian corpses, a new seed will spring up, a higher form of society. Machine production forms the founda-

tion, upon which a new generation will arise, far removed from the one-sided limitation of handicraft and of manufacture, not the slaves of Nature like the men of primitive communism, nor purchasing intellectual and physical strength and beauty with the suppression of droves of outlawed slaves, like classical antiquity; a race harmoniously developed, having zest in life, master of the earth and of natural forces, and including all the members of the community in brotherly equality.

PART III

WAGES AND PROFITS

CHAPTER I

WAGES

(1) *Changes of Magnitude in the Price of Labour-power and in Surplus-value.*

IN the second part we have dealt chiefly with the production of surplus-value. Now we shall address ourselves immediately to the laws governing wages. The introduction thereto and the transition from the second to the third part, which to some extent touches the spheres of both, form the investigation into the changes of magnitude in the price of labour-power and of surplus-value, brought about by the alterations in three factors, with which we have already become acquainted in the second part: namely (1) the length of the working day, (2) the normal intensity of labour, and (3) its productive power.

These three factors are subject to the most manifold variations, sometimes one of them alone, sometimes two, and sometimes all three, and the degrees of change vary infinitely. It would take us too far to investigate all the combinations which arise thereform; a little reflexion on the reader's part will suffice to deduce these combinations once the chief factors are given. It is only the latter that are here described. We are investigating the changes which transpire in the relative magnitude of

surplus-value and in the price of labour-power when one of the three factors changes while the others remain unaltered.

(*a*) The extent of the working day and the intensity of labour remain unaltered, while the productivity of labour alters. The productivity of labour exercises an influence on the quantity of the products which are produced in a definite period of time, but not on the magnitude of value of this mass of products. If, owing to an invention, a cotton spinner is enabled to spin 6 lbs. of cotton in an hour, whereas hitherto he has only spun 1 lb in an hour, he will now produce six times as much yarn in an hour as before, but only the same value. But the value which he imparts to a pound of cotton in transforming it by his labour into yarn is now one-sixth smaller. This fall in value reacts upon the value of the means of life of the worker, for example, his articles of clothing. The value of labour-power falls, and surplus-value rises to the same extent. The contrary, of course, takes place when there is a fall in the productivity of labour. The increase or decrease of surplus-value is always the consequence and never the cause of the corresponding increase or decrease in the value of labour-power. It depends upon a variety of circumstances, especially upon the power of resistance of the working class, if and to what extent the fall in the value of labour-power involves a fall in its price. Let us assume that, owing to an increase in the productivity of labour, the daily value of labour-power falls from 3*s.* to 2*s.*, while its price only drops to 2*s.* 6*d.* If the daily surplus-value in respect of each worker formerly amounted to 3*s.*, it would now rise, not to 4*s.*, but only to 3*s.* 6*d.*, to the great annoyance of the capitalist. Fortunately for him such a case rarely happens. It presupposes not only great power of resistance on the part of the workers, but also that the two other factors remain unchanged—the

length of the working day and the intensity of labour. The influence of alterations in these two factors is overlooked by economists, after the procedure of Ricardo. Let us now consider the influence of each of these latter changes.

(*b*) The working day and the productivity of labour remain unaltered, while the intensity of labour alters. To work more intensively means to expend more labour in the same time, and therefore to create more value in the same period. If a cotton spinner, without the producivity of labour altering, but in consequence of greater exertions, spins 1½ lbs. of cotton in an hour instead of 1 lb. as formerly, he creates about one-half more value in an hour than before. If previously he had created a value of 6*s*. in 12 hours, he now creates a value of 9*s*. in the same time. If the price of his labour-power was previously 3*s*. and now rises to 4*s*., the surplus-value is increased at the same time from 3*s*. to 5*s*. It is therefore not true, as is often contended, that a rise in the price of labour-power is only possible at the cost of surplus-value.

This applies only to the first of the cases considered by us; it does not apply to the case just referred to. In passing it may be observed that the increase in the price of labour-time in this, the second case, would not always signify that it has risen above its value. If the increase in price is inadequate to compensate the more rapid using-up of labour-power, which necessarily follows from the greater intensity of labour, the price of labour-power falls in reality below its value.

The intensity of labour differs among various nations. "The more intense working-day of one nation would be represented by a greater sum of money than would the less intense day of another nation."

In the English factories the working-day was as a rule shorter than in the German, but precisely for this reason

work was more intensive in the former, so that the English worker created greater value in a labour hour than his German colleague. "The most infallible means for reducing this qualitative difference between the English and Continental working hour," says Marx, "would be a law shortening quantitatively the length of the working-day in Continental factories."

(*c*) Productivity and intensity of labour remain unaltered, while the working-day changes. This may be effected in two directions. (1) It can be shortened. The value of labour-power is thereby unaffected; the curtailment takes place at the expense of surplus-value. If the capitalist does not wish surplus-value to be diminished, he must force the price of labour-power below its value. The opponents of the normal working-day were fond of adducing this instance. Their arguments, however, were only valid when the intensity and the productivity of labour remained unaltered. But in reality a shortening of labour-time is either a cause or an effect of an increase in the intensity and productivity of labour. (2) The working-day is prolonged. The consequences of this alteration have never occasioned the capitalist any qualms. It increases the total value of the quantity of products created during the working-day, and also the surplus-value. The price of labour-power may also rise. But here, as in the case of augmenting the intensity of labour, unless it rises to a point which is commensurate with its increased wear and tear, it will actually remain below its value.

The cases considered under the headings of *a*, *b*, and *c* may seldom occur in their entirety. As a rule an alteration in one of the three factors involves alterations in the others. Among others, Marx investigates the case where the intensity and productivity of labour grow at the same time as the working-day is shortened, and he indicates the

limit to which the working-day could be shortened. Under the capitalist mode of production the working-day cannot be shortened to coincide with the extent of labour-time necessary for the maintenance of the worker. This would mean abolishing the surplus-value which is the basis of capitalism.

The abolition of the capitalist mode of production would permit the limitation of the working-day to the necessary labour-time. Other circumstances being equal, as soon as the capitalist mode of production was abolished, it would become necessary to prolong the necessary labour-time. In the first place, because the social demands of the workers would grow, and secondly, because the accumulation of funds for the continuance and extension of production would fall within the sphere of necessary labour, whereas to-day they are provided for out of surplus-value.

On the other hand, however, the intensity of labour would grow with the shortening of the working-day. The system of socially-organised labour would lead to economies in the means of production and the abolition of all useless labour.

"The capitalist mode of production, while on the one hand enforcing economy in each individual business, on the other hand, begets by its anarchical system of competition, the most outrageous squandering of labour-power and of the social means of production, not to mention the creation of a vast number of employments, at present indispensable, but in themselves superfluous."

"The intensity and productiveness of labour being given," continues Marx, "the time which society is bound to devote to material production is shorter, and, as a consequence, the time at its disposal for the free development, intellectual and social, of the individual is greater in proportion as the work is more and more evenly divided among all the able-bodied members of society, and

as a particular class is more and more deprived of the power to shift the natural burden of labour from its own shoulders to those of another layer of society. In this direction, the shortening of the working-day finds at last a limit in the generalization of labour. In capitalist society spare time is acquired for one class by converting the whole life-time of the masses into labour-time."

(2) *The Conversion of the Price of Labour-power into Wages.*

So far we have been dealing with the value and price of labour-power and its relation to surplus-value. But what passes superficially in society as wages does not present itself as the price of labour-power, but as the price of labour.

"If we were to ask the labourers, 'How much wages do you get?' one would reply, 'I get a couple of shillings a day from my employer'; another, 'I get half-a-crown,' and so on. According to the different trades to which they belong they would name different sums of money which they receive from their particular employers, either for working for a certain length of time, or for performing a certain piece of work; for example, either for weaving an ell of cloth, or for setting up a certain amount of type. But in spite of this difference in their statements, there is one point in which they would all agree: their wages are the amount of money which their employer pays them, either for working a certain length of time or for a certain amount of work done."*

The price of a commodity is its value expressed in money. If labour has a price, it must also have a value, so the economists calculate. But what is the extent of its value? Like every other commodity, it is determined by the labour-time necessary for its production. How many labour hours are required to produce the labour of 12 hours? Obviously 12 hours.

If, according to this, labour is paid for at its full value, the worker receives as much in wages as he imparts by way

* Marx, "Wage-Labour and Capital."

of value to the product; at the end of this calculation we are accordingly faced with the alternatives of recognising the doctrine of surplus-value, or the doctrine of value, or both, to be false, and consequently declaring the riddle of capitalist production to be insoluble. The classical bourgeois economists, who reached their highest expression in Ricardo, foundered upon this contradiction. The vulgar economists, who do not attempt to investigate the modern mode of production, but instead justify it and paint it in the rosiest colours, have utilised this contradiction in the interest of their finest fallacies.

Marx demolished all these fallacies by clearly establishing the distinction between labour and labour-power, which had been confused by the economists.

In 1847 Marx had not yet made this fundamental discovery. In his "Poverty of Philosophy," as in his articles upon "Wage-Labour and Capital," he still speaks of the value of labour, whilst unconsciously meaning the value of labour-power. Our economists have so little grasped the significance of the distinction between labour-power and labour that they still treat these ideas as interchangeable, and are fond of referring to a Marx-Rodbertus theory of value, although Rodbertus uncritically adopted the Ricardian theory of value with its confusion of labour and labour-power, and the contradictions that flow therefrom, whereas Marx, in this and other points of fundamental importance (we recall the limitation of value-forming labour to socially-necessary labour, the distinction between general value-forming and special, use-value-creating labour and so on), divested them of their contradictions, and was the first to construct a real, adequate, and firmly established theory of value from the Ricardian doctrine.

Marx first demonstrated that labour is not a commodity, and consequently does not possess any commodity

value, although it is the source and the measure of all commodity values. What appears in the market is the labourer who offers his labour-power. Labour originates from the consumption of the commodity labour-power, just as a certain blissful feeling is created by the consumption of the commodity champagne. Just as the capitalist buys the champagne, but not the bliss which it generates, so he buys labour-power, and not labour.

But labour-power is a commodity of a peculiar kind ; it is not paid for until after it has been consumed ; the worker only receives his wages when he has done his work.

Labour-power is bought, but it seems as if labour were being paid for. Wages do not appear as the price of labour-power. They undergo a transformation before they emerge from the pocket of the capitalist into the light of day as wages ; they seem to us to be the price of labour.

How this transformation is brought about and what its consequences are the economists anterior to Marx were, of course, unable scientifically to investigate, as they were not acquainted with the distinction between the price of labour-power and labour. Marx gave us, therefore, the first strictly scientific theory of wages. The two basic forms of wages are time wages and piece wages.

(3) *Time Wages.*

We know that the daily value of labour-power, under specific circumstances, is a definite quantity. Suppose the daily value of labour-power amounts to 3*s.* and the customary working-day is 12 hours. We assume here as elsewhere in this book, where the contrary is not stated, that the value and the price of labour-power coincide. The price of the labour of 12 hours therefore appears : 2*s.* 4*d.*, and the price of one hour's labour : $2\frac{1}{3}d.$ The price of the labour hour thus ascertained serves as the unit measurement for the price of labour.

We shall therefore discover the price of labour if we divide the daily value of labour-power by the number of working hours of a customary working-day.

The price of labour and daily or weekly wages may fluctuate in various directions. Let us assume that labour time increases from 12 to 15 hours, and that simultaneously the price of labour falls from 2½*d.* to 2*d.* The daily wage now amounts to 2*s.* 6*d.* It has risen although the price of labour has fallen at the same time. The price of labour depends, as stated above, upon the daily value of labour-power, and upon the length of the customary working-day.

If, now, owing to an extraordinary event, a crisis for example, the capitalist curtails the labour-time because his commodities are unsaleable, and puts his works on half time, the price of labour is not raised correspondingly. If this amounts to 2*d.* the worker will only receive 1*s.* for six hours working time, although the daily value of his labour-power is far higher, according to our assumption 2*s.* 4*d.**

If the prolongation of the working-day is a source of suffering for the workers, its temporary curtailment constitutes a new cause of privations.

Whenever it is a question of a legal shortening of the working-day, the capitalists seize the opportunity to express their sympathy with the poor workers. "We are already obliged to pay the most miserable starvation wages for fifteen hours' work," they exclaim, "now you want to reduce the labour-time to ten hours, and thus take a third of their wages from the starving workers. We must energetically protest against such barbarism."

* The price of labour may even fall at the same time: this would, however, not be the consequence of the curtailment of labour time, but of the greater supply of labour-power, and so on, phenomena which we do not have to discuss here. It must always be borne in mind during this investigation that so far we have been dealing with the bases of the phenomena of the capitalist mode of production, and not with its aspect as a whole.

The noble friends of humanity forget that the price of labour rises if the length of the customary working-day decreases ; the price of labour is all the higher, the higher the daily value of labour-power and the shorter the length of the customary working-day. Wages fall with a temporary shortening of the working-day, but rise with a permanent shortening. Among other things this has been seen to be the case in England. According to the Factory Inspector's report for April, 1860, between 1839 and 1859 wages rose in the factories subject to the 10 hours normal working-day, while they fell in those factories which worked 14 to 15 hours daily. This rule has been confirmed by all experience within most recent times.

The permanent prolongation of labour time depresses the price of labour. On the other hand, a low price of labour compels the workers to submit to prolongation of the working-day, in order to assure themselves a wage, if only a miserable one. A low price of labour and a long working time, however, also exhibit the tendency to reinforce each other. The capitalists lower wages and prolong the labour-time in order to augment their profits. But their competition with each other eventually compels them to reduce the prices of commodities to a corresponding extent. The extra profit which is realised through the prolongation of the working-day and the reduction of wages now disappears, but the low prices remain and operate as a means of keeping wages at the low level they have reached with excessive labour-time. The capitalists derive no permanent advantage, whilst the workers derive a permanent disadvantage therefrom. The legal fixation of the normal working-day sets a sharp limit to this development.

Further beneficial effects of the normal working-day may also be mentioned.

In certain branches of labour it transpires that the

capitalist does not pledge himself to the payment of a fixed weekly or daily wage, but remunerates the worker according to the number of hours worked. The worker must be at the disposal of the capitalist the whole day, but it is at the option of the latter to work him immoderately or to employ him only for a few hours. The price of labour, however, is determined according to the length of the customary working-day.

In paying for the normal price of labour, the capitalist has at his disposal the whole of the labour-power of the worker, without paying him for the entire value of his labour-power; this is obvious enough on the days when he employs him below the normal number of working hours; but it also applies to the time when he employs him above this normal period.

The value of the labour-power expended during each working hour is not in fact equal. The labour-power expended during the first hours of the working-day is easier to replace than that expended during the last hours. The value of the labour-power expended during the first labour hours is less than that expended during the tenth or the twelfth hour—although the use-value of the latter may be much smaller than that of the former. Accordingly, in many businesses the custom has grown up, spontaneously and not as a result of physiological and economic insight, of regarding the working-day up to a certain point as "normal," and the labour-time beyond this limit as overtime, which is better paid.

The above-mentioned capitalists who employ workers by the hour save the higher rates for overtime.

The distinction between the "normal" working-day of the kind mentioned above and overtime is not to be conceived as if the price of labour during the normal working-day represented the normal wage, while an additional wage which exceeded the daily value of labour-power was

paid for overtime. There are factories which work overtime year in and year out. The "normal" wage is there fixed so low that the worker cannot exist upon it alone and is compelled to work overtime. Where overtime is systematically worked, the "normal" working-day is only a portion of the actual working-day and the "normal" wage is only a portion of the wage necessary for the maintenance of the worker. The better payment for overtime is frequently only a means of inducing the worker to acquiesce in a prolongation of the working-day. But this coincides, as we have seen, with a fall in the price of labour.

The normal working-day has the tendency to set sharp limits to all these efforts to depress wages.

(4) *Piece Wages*

Time wages are the converted form of the price of labour-power; piece wages are a converted form of time wages.

Suppose the customary working-day amounts to 12 hours, the daily value of labour-power is 2*s*., and a worker fabricates on an average 24 pieces of a certain article each day—experience soon demonstrates in capitalist business what performance a worker of average skill and intensity is capable of each day. I may employ a worker by the day at a wage of 2*d*. per hour, but I could also pay him for every piece which he supplies at 1*d*. per piece. In the latter case the wage is a piece wage.

It is obvious that, as in the case of time wages, the basis of piece wages is the daily value of labour-power and the customary length of the working-day. It seems, of course, as if the piece wage were determined by the performance of the producer; this semblance vanishes, however, if one knows that the piece wage is correspondingly reduced as soon as the productivity of labour rises. If the worker no longer requires a half, but only a quarter, of an hour for the production of the piece of an article in our

above example—possibly owing to the improvement of a machine—other circumstances remaining equal, the capitalist will no longer pay him a 1*d.* but only ½*d.* for the piece.

Instances frequently occur, and they are known to every one who is concerned with labour affairs, where particular workers or groups of workers, who have once been lucky enough to furnish an unusually large quantity of products, are arbitrarily docked of the agreed piece wage for this special case, on the plea that the total wage is too much above the usual level of wages.

Such an example shows distinctly enough that piece wages are only a converted form of time wages, a form which the capitalist only resorts to when he thinks it will be more advantageous for him than the unconverted time wages.

As a rule piece wages offer great advantages to the capitalist. In paying time wages the capitalist pays for labour-power in the form of the quantity of work done; in piece wages he pays for it in the form of the product. He can therefore rely on it that, in his own interest, the worker will supply the greatest possible quantity of products in every working-hour, without any external stimulus. He is able to ensure much more easily that the worker supplies a product of average quality. The slightest defect here becomes a cause, and very often a pretext, for wage reductions, sometimes for the downright cheating of the workers.

The supervision exercised by the capitalist and his representatives over the workers becomes therefore, to a great extent, superfluous with piece wages, the capitalist is saved this work and its cost. Piece wages even render it possible in certain branches of industry for the workers to work at home, whereby the capitalist is saved a number of establishment and running expenses (for heating, light-

ing, rent, and so on) and has the use of a part of his capital which otherwise he would have been obliged to lock up. In trades where home work is prevalent, such as tailoring and shoemaking, it sometimes happens that masters demand rent from journeymen who work in their workshops instead of at home. The worker must pay extra dearly for the pleasure of being able to "work under the master's eye."

Under the piece wages system the personal interest of the worker impels him to work as intensely and as long as possible, in order to increase his daily or weekly wage to the utmost. He overlooks the fact that not only does overwork tend to ruin him physically, but also that the price of his labour tends to fall. And even if he perceives this, he is unable to evade the iron law of competition with his fellow-workers. This competition of workers with each other, and the appearance of freedom and independence which piece-work evokes, and frequently also their isolation from each other (in home work) renders the organisation and united action of these workers very difficult.

The piece wages system involves yet another drawback for the workers. For example, it permits the interposition of parasitic existences between the workers and the capitalists, middlemen who live upon the fraction of the wages paid by the capitalist which they are able to intercept. Moreover, the system of piece wages makes it possible, where work is carried on by groups of workers, for the capitalist to conclude agreements with the foremen of groups for the supply of products at a certain price, and it is left for the foremen to pay their subordinate workers what they like. "The exploitation of labour by capital is here effected through the exploitation of the labourer by the labourer."

Piece wages are as disadvantageous for the workers as

they are advantageous for the capitalists. Moreover, piece wages are the form of wages which correspond to the capitalist mode of production. Although not quite unknown to guild handicraft, it was not until the period of manufactures that the system was extensively applied. In the nascent period of modern industry it served as one of the most important levers for the prolongation of labour time and the reduction of the price of labour.

(5) *National Differences in Wages*

We have noted a series of factors which underlie the value and the price of labour-power and their relation to surplus-value, determined by alterations in the length of the working-day, in the intensity and productivity of labour. This movement is intersected by a simultaneous movement in the mass of the means of life in which the price of labour-power is realised. All these changes also determine changes in the converted form of the price of labour-power, in wages. Thus wages constantly fluctuate in a country, and differ at various times. To this difference in time there corresponds a difference in space. Every one knows that wages are higher in America than in Germany, and higher in Germany than in Poland.

Nevertheless a comparison between the wages of various nations is not quite a simple matter.

"In the comparison of the wages in different nations," says Marx, "we must therefore take into account all the factors that determine changes in the amount of the value of labour-power; the price and the extent of the prime necessaries of life as naturally and historically developed, the cost of training the labourers, the part played by the labour of women and children, the productiveness of labour, its extensive and intensive magnitude. Even the most superficial comparison requires the reduction first of the average day wage for the same trades, in different countries, to a

uniform working-day. After this reduction to the same terms of the day wages, time wage must again be translated into piece wage, as the latter only can be a measure both of the productivity and the intensity of labour."

The absolute price of labour may stand comparatively very high in the case of one nation, and yet the relative wages, that is the price of labour compared with the surplus-value or the value of the entire product, and the real wages, that is the quantity of the means of life which the worker can obtain, may be very low.

Among nations where the capitalist mode of production is more developed, the productivity and intensity of labour is greater than among those which lag behind in the development of this mode of production. In the world market, however, the more productive national labour, like more intensive labour, counts as greater value-forming labour.

Let us suppose that in Russia a cotton spinner, badly nourished and developed, excessively worked, operating with bad machines, spins an average of 1 lb. of cotton in an hour; an English spinner, on the other hand, spins 6 lbs.; 1 lb. of Russian yarn would not, on this account, have greater value on the world market than a pound of English. The spinning labour in England therefore creates in the same time more value than that in Russia; the value of its products during an equal period is embodied in England in a greater quantity of gold than in Russia. Consequently, the money expression of wages may be higher in a capitalistically developed country than in an undeveloped country, and yet the price of labour in relation to surplus-value may be much lower, precisely because the value of the total product is higher.

But in a country where the productivity of labour is high, it is also found that the value of money is low. The price of labour-power may therefore be a high one without

the worker being able to buy more food with his higher wages.

In great undertakings outside England, in the construction of railways in Asia for example, the English contractors were obliged to employ expensive English workers by the side of cheap native workers. Experience in this and similar businesses has shown that what seems the dearest labour is in reality the cheapest in relation to the output and the surplus-value.

Paying the most miserable wages and exploiting labour without restriction, pre-war Russian industry was only able to drag out a wretched existence with the assistance of a prohibitive tariff. It could not compete with English industry, which produced with relatively higher wages and shorter labour time, with numerous restrictions upon female and child labour, health regulations, etc. The absolute price of Russian labour, its expression in money, was low. Its relative price in relation to the value of its product in the world market was high.

CHAPTER II

THE REVENUE OF CAPITAL

We have seen how money is turned into capital, and how the wage worker by his labour not only reproduces the value of that portion of capital expended upon the necessary instruments of production, but also creates new value, which is equivalent to the value of his labour-power plus a surplus-value.

The movement of capital, however, does not terminate with the appearance of surplus-value.

Just as a commodity which does not succeed in converting itself into money misses its vocation, so also does the surplus-value which coagulates in a certain quantity of commodities, in surplus-produce. After the surplus-value has been produced in the form of surplus-produce, its value must be realised in money, the commodities produced must be brought to the consumer. On the way to realisation, surplus-value, like every other value, meets with a number of adventures, partly of an amusing, partly of a sorrowful character. To-day it may be realised at an excessively high price, to-morrow at a considerably lower price, or not at all. Sometimes the commodity in which it is embodied is sought after by a buyer before it reaches the market, at other times it remains in a shop window for years, and so on. And both after and during this peril it is threatened with other dangers. There is the merchant who attends to the sale of commodities, in return for which he abstracts a piece of the surplus-value

and pockets it as commercial profit. There is rent to pay to the landlord, then taxes, then interest on borrowed money, and so on, until what remains over disappears as profit into the pockets of our capitalist.

We are not here concerned with all the adventures which befall surplus-value and the transformations which it undergoes on this journey. They belong partly to the sphere of the circulation process of capital, which is dealt with by Marx in the second volume of his book, and are partly developed in the analysis of the process of capitalist production as a whole, which he undertook in the third book. The first volume of "Capital" only deals with one side of the total process, the immediate process of production; only so far as this is affected by surplus-value have we to occupy ourselves with the fate of surplus-value after it has once been produced. We shall therefore assume, as all along where the contrary has not been expressly presupposed, that the capitalist sells his commodities in the market at their full value; we shall further assume that the surplus-value returns to the pockets of the capitalist without any subtraction. The opposite assumption would merely complicate the investigation without altering anything in its essential result.

Surplus-value can only exercise an influence upon the production process in reproduction, or the repetition of the production process.

Every social process of production is at the same time a process of reproduction. In every form of society production must either proceed uninterruptedly, or periodically repeat itself. Consequently every form of society is placed under the necessity of continuously producing, not only the means of consumption, but also the means of production.

When production assumes a capitalist form, so also does reproduction. If it is necessary for every society to pro-

duce use-values continuously or at regularly recurring intervals, so is it necessary for capital continuously to produce surplus-value, constantly to reproduce surplus-value, if it is to remain capital. Once it has hatched surplus-value, it must be employed to hatch it a second time. Capital is therefore for ever producing fresh surplus-value. The latter appears as the periodically ripening fruit of the tree of capital, as constant income from capital, as revenue.

So much for surplus-value as far as it originates from reproduction. But the process of reproduction also offers the surplus-value an opportunity to re-enter the process of production. Suppose a capitalist employs a capital of £5,000, which yields him a yearly revenue of £1,000. What will he do with this revenue? Two extreme cases are possible: he would either consume the whole annual amount of the surplus-value, or augment his capital by this amount. In the majority of cases neither the one nor the other of these extreme contingencies would arise, but the surplus-value would be partly consumed and partly added to the initial capital.

If the whole of the surplus-value be consumed, the amount of capital would remain unaltered. Simple reproduction has taken place. If the surplus-value has been added wholly or in part to the capital, accumulation of capital has occurred, and reproduction proceeds on a more extensive scale.

CHAPTER III

SIMPLE REPRODUCTION

SIMPLE reproduction is only a repetition of the process of production on the same scale. Yet the act of repetition invests this process with a number of fresh characteristics.

Let us assume that a money owner, who may have acquired this money through work, transforms it into capital. Owning £500, he expends £450 in constant capital, and £50 in variable, in wages. By employing this capital he creates a quantity of products to the value of £550, which he also sells at their full value. The surplus-value of £50 is consumed by him, and reproduction takes place upon the old scale: £450 are expended in constant, £50 are expended in variable capital. We can now detect a distinction between this and the former case: the £50 which were expended during the first process of production in wages were not created by the workers employed in the undertaking; they came from another source; perhaps they had been earned by the capitalist himself.

But where do the £50 come from which are expended in wages during the repetition of the process of production? They constitute the realisation of value created by the workers during the previous process of production. The workers have not only transferred the value of the constant capital (£450) to the product, but created fresh value (to the amount of £100) of which a part (£50) is equal to the value of their labour-power, and a part is surplus-value.

If we regard the capitalist process of production as a single process of production (or commencing with the first outlay of capital) wages appear to be an advance out of the pocket of the capitalist. If we regard the capitalist process of production as a process of reproduction, it is obvious that the worker is paid out of the product of his own labour. In this sense it is correct to say that the worker receives a portion of the product of his labour in wages. Only it is the product already sold of a previous period of production of which he receives a portion in the shape of wages.

Let us revert to our example. Let us assume that each period of production occupies half a year. Every year our capitalist pockets a surplus-value of £100 and consumes it. At the end of five years he has consumed £500, a value equal to that of his original capital. But he still owns a capital of the value of £500.

This new capital value is equal in magnitude to the original, but its foundation is different. The original £500 did not originate from the labour of the workers employed in his business, but from another source. But he has consumed this £500 within five years ; if, in addition, he still possesses £500, the latter must be derived from surplus-value. Thus every capital, from whatever source it might originate, is after a certain time transformed through the agency of simple reproduction into capitalised surplus-value, into the product of surplus alien labour, into accumulated capital.

The starting point of the capitalist process of production is the divorce of the worker from the means of production, the accumulation of the propertyless workers on the one hand, and the accumulation of means of production and of means of life on the other hand. In the capitalist process of reproduction, this starting point appears as the result of the process of production. The capitalist

process of reproduction itself continuously creates and maintains its own conditions, capital and the class of wage workers.

The means of life and means of production which the wage workers create do not belong to them, but to the capitalists. The wage workers constantly emerge from the process of production in the same condition as they entered it, as propertyless proletarians ; on the other hand, at the end of each period of production, the capitalists always find themselves in possession of means of life, which purchase labour-power, and means of production, which producers can operate.

Thus the worker keeps on creating the conditions of his dependence and his poverty.

The reproduction of the working class is rendered necessary by the process of the reproduction of capital.

As long as we were investigating the process of production as a single, and therefore an isolated, process, we were dealing with the individual capitalist and the individual worker. Here it seems that labour-power and the labourer, who cannot be divorced therefrom, belong to the capitalist only during the time of their productive consumption, during the working-day. The time left over belongs to the worker himself, and his family. If he eats, drinks, sleeps, he does so merely for himself, not for the capitalist.

But as soon as we consider the capitalist mode of production in its state of movement and its various ramifications, and therefore as a process of reproduction, we are concerned from the outset, not with the individual capitalist and worker, but with the class of capitalists and the class of workers. The process of reproduction of capital requires the perpetuation of the working class, that is to say, the workers must constantly restore the labour-power they have expended and continuously

provide for the growth of fresh workers, in order that the process of production may be constantly renewed.

Capital finds itself in the agreeable situation of being safely able to leave the making of these important arrangements to the self-preservative and propagative instincts of the workers.

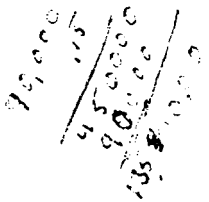
Seemingly the workers live only for themselves outside of labour-time; but in reality they live for the capitalist class, even when they are out of work. If after their work is done, they eat, drink, sleep, and so on, they thereby maintain the class of wage workers, and therefore the capitalist mode of production. When the employer pays the worker his wages he only gives him the means of maintaining himself, and to that extent his class, for the benefit of the capitalist class.

Precisely because the workers consume the means of life which they buy with their wages, they are continuously obliged to offer their labour-power for sale.

Thus from the standpoint of reproduction, the worker is engaged in the interest of capital, not only during his labour time, but also during his "free" time. He eats and drinks no longer for himself, but so that he may maintain his labour-power for the capitalist class. It is therefore not a matter of indifference to the capitalist how the worker eats and drinks. If, instead of resting and recuperating his labour-power, the worker gets drunk on Sunday and has a headache on Monday, the capitalist does not regard this as an injury to the worker's own interests, but as an offence against capital, an embezzlement of the labour-power that is due to capital.

It is no longer the labour-power that is bought for a certain time, but the whole worker, the whole working class, which appears as an appendage of capital, from the standpoint of the process of reproduction. Where the worker does not perceive this and possesses the means of

escaping, as by emigration for instance, the capitalist has no hesitation, under certain circumstances, in demonstrating to the worker by legal compulsion that he has to maintain and propagate himself, not for himself, but for capital. For example, the emigration of skilled workers was formerly prohibited by law in most States. To-day this is not necessary. The capitalist mode of production has become so strong that its laws are executed as economic necessities, without the aid of legislation. The worker is to-day bound to capital with invisible chains, and finds capital everywhere, wherever he turns.



CHAPTER IV

THE CONVERSION OF SURPLUS-VALUE INTO CAPITAL

(1) *How Surplus-value becomes Capital*

It is rare that the capitalist consumes the whole of the surplus-value. As a rule, he converts at least a portion of it into capital. "Employing surplus-value as capital, reconverting it into capital, is called accumulation of capital."

The process is easy to grasp. Let us recall the example in the preceding chapter. A capital of £500 yields an annual surplus-value of £100 to its employer. If the capitalist does not consume this, but adds it to his initial capital, he will own a capital of £600, which, under similar circumstances, would bring in an annual surplus-value of £120. Adding this to the amount of capital will increase the latter to £720, and the annual surplus-value to £144; repeating the same process in the following year will result in a capital of £864, yielding a surplus-value of £172 16*s*., making £1,036 16*s*. together, and so on. After four years the capital has more than doubled in consequence of the accumulation of surplus-value.

So far we are not concerned with the question as to whether the whole or merely a part of the surplus-value is accumulated. Nor is it any more important for the present investigation in what manner the surplus-value is accumulated, whether it forms additional or fresh capital. An owner of a spinning factory could utilise the surplus-value in extending his factory, installing more machines and

engaging more workers, buying more raw materials; he could also employ it to construct a new mill or to establish an entirely different business, a weaving shed or a coal mine, and so on. However the surplus-value may be employed, in this case it will always be reconverted into capital, into value that breeds surplus-value.

In order, however, that surplus-value may become capital, after it has been transformed from commodities into money, it must undergo a further transformation from money into the corresponding commodities. Let us take a cotton spinner for example. He has sold his yarn and now owns surplus-value in the shape of money, in addition to the capital originally advanced. As well as the original capital, this surplus-value is now to be converted into fresh capital. This is only possible if he can find in the market a quantity of commodities correspondingly increased which may be used by him as means of production; if the surplus-value is to become extra capital, additional raw materials—in our example, cotton, additional instruments of labour, such as machines, additional means of life for the maintenance of more labour-power, and finally additional labour-power—must be available, that is, the material prerequisites for an extension of production must exist before an accumulation of capital is possible.

The cotton spinner, however, may expect to find in the commodity market the necessary additional means of production.

For surplus-values, that is to say, surplus-produce, are being created not alone in cotton spinning, but also in cotton planting, in machine construction, in coal mining, and so on.

If we lose sight of the surplus-value which falls annually to the individual capitalist, and keep in mind the annual sum of surplus-value which is appropriated by the whole

of the capitalist class, the following rule may be formulated: Surplus-value cannot (wholly or in part) be converted into capital unless there exists a corresponding amount of surplus-produce, consisting of means of production and means of life for the workers.

But where do the additional workers come from? This question need not cause the capitalist to grow any grey hairs; it is sufficient that he gives the workers in wages what is necessary to keep them alive, and they will look after their own propagation and increase.

The working class itself produces the additional workers who are necessary for the extension of production, for reproduction upon an extended scale.

We have already observed, under the assumptions pertaining to simple reproduction, that after a number of years each capital will consist of an accumulation, of mere surplus-value. But such a capital can at least represent the produce of the labour of its owner when it commences to function. Not so the capital which springs from accumulated surplus-value. From the outset this is plainly the produce of the labour of those who do not own it. The accumulation of surplus-value means the appropriation of unpaid labour for the purpose of extending the appropriation of unpaid labour.

What a contradiction of the principles of commodity exchange! We have seen that originally the exchange of commodities was conditioned, on the one hand, by the private property of the commodity producer in his product, and, on the other hand, by the exchange of equal values, so that none could obtain possession of a value except through his own labour or through the surrender of an equal value.

Now we find, as the foundation of the capitalist mode of production, on the one hand, the separation of the labourer from the product of his labour; he who creates

the product and he who owns it are two different persons ; and on the other hand we find the appropriation of value without the surrender of an equal value, surplus-value. Moreover, we now find that surplus-value is not only a result, but is also the foundation of the capitalist process of production. Capital not only produces surplus-value, but surplus-value turns into capital, so that finally the greater part of all wealth consists of value which has been appropriated without an equivalent value.

This distortion of the foundation of commodity production into its contrary is effected, however, not in contradiction to its laws, but on the basis thereof.

" Just as at a given stage in its development, commodity production necessarily passes into capitalistic commodity production (in fact, it is only on the basis of capitalistic production that products take the general and predominant form of commodities), so the laws of property that are based on commodity production necessarily turn into the laws of capitalist appropriation. We may well, therefore, feel astonished at the cleverness of Proudhon, who would abolish capitalistic property by enforcing the eternal laws of property that are based on commodity production ! "

(2) *The Abstinence of the Capitalist*

So far we have considered only the two extreme cases, when the surplus-value is wholly consumed or wholly accumulated. But, as already indicated, as a rule only a portion of surplus-value is consumed, and a portion is accumulated. The first portion may be regarded as revenue in the narrower sense.

It is at the option of the capitalist to decide how large a portion of surplus-value he will consume, and how large a portion is to be converted into capital. The decision of this question provokes a stubborn internal conflict.

With Faust he may exclaim :

" in my breast
Alas, two souls dwell—all there is unrest ;
Each with the other strives for mastery,
Each from the other struggles to be free.
One to the fleshly joys the coarse earth yields,
With clumsy tendrils clings, and one would rise
In native power and vindicate the fields,
Its own by birthright—its ancestral skies."

Yes, in the capitalist the old antagonism between fleshly lusts and asceticism, between Heathenism and Christianity, repeats itself in a peculiar way. The capitalist sighs longingly after the joys of this world, but every enjoyment seems to him sinful, and he cannot have it with impunity.

The portion of surplus-value which the capitalist personally consumes is as a rule not an arbitrarily, but an historically, determined magnitude ; determined like the wage of the worker by the customary standard of life of the section of society that is concerned.

Like the worker, although in another sense, the capitalist also belongs to capital for the whole period of his life. Competition not only compels him to execute the laws of the capitalist mode of production in his business, but also dominates his private life. If he outruns the constable, the word goes round that he is a waster, and his credit falls. If he is miserly and does not keep up appearances, it gives the impression that his business does not yield the average profit, and his credit likewise falls. Thus the capitalist is obliged to consume a certain portion of his surplus-value, which is determined by the period and circle in which he lives. This magnitude, however, is far more elastic than the magnitude of wages.

As regards that portion of surplus-value which is to be

accumulated, no limits are prescribed except the total mass of surplus-value itself and the elastic standard of life of the capitalist. The more there is accumulated, so much the better. The capitalist mode of production itself makes a continuous accumulation of capital a necessity. We have seen how, with the technical development, the amount of capital necessary for the installation and the operation of an undertaking in a specific branch of labour becomes ever larger, if the products are to be created with an average expenditure of necessary labour. If, for example, the minimum sum which must be embarked in an undertaking is £1,000, in order to maintain it in a competitive state, this minimum sum may be increased to £2,500 within twenty years through the introduction of new methods of labour and new and more comprehensive machines and so on. The capitalist who originally set up in business with £1,000, but neglected to accumulate sufficient surplus-value, so that after twenty years only £1,500, instead of £2,500, is at his disposal, will probably be incapable of holding his own, and will become bankrupt. But the capitalist does not need this incentive to accumulation. The incentive to accumulate for the sake of accumulation is developed in the capitalist under the modern mode of production just as at an earlier stage of commodity production the miser was moved to hoard gold and silver. As in the case of the hoarding of treasure, the accumulation of capital has no limits in itself; it is boundless. However much the capitalist may own, and when his income has long since exceeded his capacity for enjoyment, he is tireless in hunting for the proceeds of fresh surplus-value, not to increase his enjoyments, but to augment his capital.

Classical political economy discussed the consequences and causes of accumulation, on the one hand, and of the consumption by the capitalist class, on the other hand,

without any prepossessions. It dealt with the accumulation of capital only from the economic, not from the moral standpoint, as the morality of the proceeding was very dubious.

The proletariat then began to grow, and to attain to a definite class-consciousness. At the end of the eighteen-twenties, in England as well as in France, the Labour Movement began to make its influence felt. Now it was no longer a question of investigating economic problems, but of justifying capital. "Ethics" was introduced into political economy; that worthy dame became moral in her old age. Knowledge took a back seat, and sentiment became the chief factor. With the help of this sentiment, it was soon discovered that the capitalist manifested a heroism worthy of all admiration when, instead of consuming the surplus-value, he refrained therefrom and accumulated it. It went without saying that the worker owed reverence and gratitude to this new pillar of sanctity, and it was equally obvious that the saint, despite his great abstinence, could not live on reverence and gratitude alone; and so, for the encouragement of rich virtue and lucrative morality, the economists granted him a moral right to remuneration for the accumulation of unpaid labour: the common-sounding word "profit" was transfigured, and "wages of abstinence" appeared.

(3) *The Abstinence of the Worker and other Circumstances affecting the Extent of Accumulation*

The greater the "renunciation" of the capitalist, the greater the extent of accumulation. Luckily for him, there are other factors which exercise a decisive influence upon the extent of accumulation. Everything that augments the mass of surplus-value widens the extent of accumulation—other circumstances remaining equal. We are already familiar with the causes that determine the

mass of surplus-value. Only a few of them need here be mentioned, which, from the standpoint already gained, open up new prospects. One of the most important among them is the abstinence of the worker. It is clear that the smaller the remuneration of the worker, the greater is the rate of surplus-value, and the greater is the portion of surplus-value destined for accumulation, assuming that the consumption of the capitalist remains the same. Everything that reduces the value of labour-power or that is calculated to depress wages below this value promotes the accumulation of capital. Hence the moral indignation of capital and its advocates at the "luxury" of the workers who undermine national prosperity by smoking cigarettes or drinking beer.

With admirable ingenuity the capitalist world has devised innumerable institutions and methods which promote the abstinence of the worker, from Rumfordian suppers to public kitchens and vegetarianism. Marx quotes a number of typical examples of such institutions in "Capital."

It is very inconvenient for the capitalist that every extension of business necessitates a relatively large outlay of constant capital; an outlay which becomes ever greater, the more the machinery of modern industry is perfected. But the sweet consolation remains to him that, once the amount of constant capital necessary for the business has been obtained, production can be extended within certain limits by the advance of variable capital, without an advance of the same proportion of constant capital being necessary. If a manufacturer is doing good business and desires to produce more, he can perhaps obtain this result by prolonging the working-day by two or three hours. He need instal no new machines, provide no new factory buildings. He merely has to increase the raw and auxiliary materials.

But there are industries which have no raw materials

to buy, as for example, mines, or which have only small quantities of raw materials to supply, as seeds and manure in agriculture. These industries extract their raw materials from the earth. In such cases, it is often sufficient to increase the supply of labour in order to augment the quantity of the product. This increase in the product is due to the earth and to labour alone, but capital has acquired both, and with them the opportunity of "augmenting the elements of its accumulation beyond the limits apparently fixed by its own magnitude, or by the value and mass of the means of production, already produced, in which it has its being."

In addition to the earth and the workers, capital has appropriated science; although it has no part in the scientific development as such, to it alone fall all the fruits ripened by the progress of science, in promoting the productivity of labour. It thereby promotes the accumulation of capital. With the productivity of labour, the value of labour-power falls, while the rate of surplus-value rises. Moreover, an increase in the productivity of labour enables the capitalist to obtain for his personal consumption a larger quantity of the cheapening means of life and of enjoyment, without an increased expenditure of surplus-value, or to obtain the same quantity as before with a smaller expenditure: to live more conveniently or to accumulate more without retrenchment, and frequently to do both things at the same time.

The greater the sum of the capital outlay, the more productive is labour, the greater is not only the rate, but also the mass of surplus-value, and the more the capitalist can enjoy and also accumulate.

From the indications that have been furnished, it is plain that capital is no fixed, but a very elastic magnitude, which is capable of considerable expansions and contractions; it constitutes only a portion of the social wealth;

by advances from other portions of the same, it can increase the consumption fund of the capitalist class and also of the working class, whilst these funds can be diminished by levying taxes thereon. Its influence is augmented by the prolongation of labour-time, increasing the productivity of labour, and greater exploitation of the earth. We leave entirely out of account the conditions of the process of circulation, as for instance the acceleration or the retardation of the turnover of capital, we also ignore the conditions of the credit system, which are of such great importance for the extension and contraction of capital and its scope. These factors cannot be discussed at this juncture. But the conditions of the process of production have already revealed the elasticity of capital. The economists, however, regard capital as a definite magnitude with a circumscribed sphere of influence. Thus variable capital appears to them as a fixed magnitude, the so-called labour fund. "So much capital," they say, "is ear-marked to serve for the payment of the workers. The more workers there are, the less the share that falls to each of them; the fewer workers, the larger this share is." The variable capital is also equated with the means of life which it represents for the workers, and it was said:

"The number of workers who are employed in a country and the level of their wages depend upon the quantity of the means of life that are in existence. If the level of wages is too low, or if there are many workers who can find no employment, this merely arises from the fact that the number of workers increases more quickly than the supply of the means of life. It is to Nature, and not to the mode of production, that the poverty of the working class is due."

Upon these assumptions the so-called Malthusian theory was constructed.

CHAPTER V

OVER-POPULATION

(1) *The "Iron Law of Wages"*

THE Malthusians used to assert that, in consequence of their "thoughtless habits," the workers increased more rapidly than the available means of life, or more strictly speaking, the variable capital. In this way over-population arises. More workers offer themselves to the capitalists than the latter can employ, the available means of life is not sufficient for all the existing workers, and consequently, so long as limits are not placed on the increase of the workers, unemployment and hunger and all the vices and poverty which flow therefrom are necessarily the lot of at least a part of the working class.

Thus the Malthusians. Let us now follow Marx in investigating the real shape of the correlations between the growth of capital and the increase of the working class.

"The most important factor in this inquiry," says Marx, "is the position of capital and the changes it undergoes in the course of the process of accumulation.

"The position of capital is to be understood in a twofold sense. On the side of value, it is determined by the proportion in which it is divided into constant capital or value of the means of production, and variable capital or value of labour-power, the sum total of wages. On the side of material, as it functions in the process of production, all capital is divided into means of produc-

tion and living labour-power. This latter composition is determined by the relation between the mass of the means of production employed, on the one hand, and the means of labour necessary for their employment on the other. I call the former the *value composition*, the latter the *technical composition* of capital. Between the two there is a strict correlation. To express this, I call the value composition of capital, in so far as it is determined by its technical composition and mirrors the changes of the latter, the *organic composition* of capital. Wherever I refer to the composition of capital, without further qualification, organic composition is always intended."

This is different with individual capitals. In the following discussion we assume the average composition of the social capital of a country.

After these preliminary remarks let us proceed with our investigation.

In the first place let us assume the simplest case. Accumulation proceeds without any alteration in the composition of capital, that is, a definite mass of the means of production always requires the same amount of labour-power to set it in motion. As an example, we will take a capital of £5,000, which consists as to two-thirds of constant and as to one-third of variable capital. If the surplus-value of £1,000 is added to the original capital, the additional capital is divided, according to our assumption, in the same proportions as the initial capital; the total capital will now consist of £4,500 constant and £1,500 variable; the latter has grown in the same ratio as the former, by 20 per cent. If, however, the additional capital is to expand, it will require extra labour-power. The accumulating surplus-value of £1,000 can only become capital in our case if the number of wage workers at its call increases by 20 per cent.

If, with an unvarying composition of capital, the wage workers do not increase as rapidly as the latter, the

demand for workers grows more quickly than their supply, and wages rise.

The Malthusians have this case in mind when they recommend the limitation of the increase of the workers as the "solution of the social question." In so doing, they overlook the fact that the relation of capital, the relation between capitalists and wage-workers, is not thereby abrogated. The accumulation of capital signifies the reproduction of the capital relation upon an extended scale, signifies the growth of capital and of the mass of surplus-value, of unpaid labour, on the one hand, and the increase of the proletariat, on the other hand.

Even when the accumulation of capital raises the price of labour, this is not possible without a simultaneous increase of the proletariat, and without an extension of the dominion of capital.

Wages, however, can never rise so high as to jeopardise surplus-value. Under the capitalist mode of production, the demand for labour-power is produced by the need of capital for self-expansion, for the production of surplus-value. Consequently, capital will never buy labour-power at a price which would exclude the production of surplus-value.

If wages rise in consequence of the accumulation of capital, two things are possible: either the progress of accumulation is not disturbed by the rise in the price of labour—although the rate of surplus-value may fall, the mass of surplus-value may simultaneously increase in consequence of accumulation.

Or else accumulation is retarded, and checks the cause which sent up wages. The latter fall in consequence until they reach a level which is consistent with capital's need for expansion. "The mechanism of the process of capitalist production removes the very obstacles that it temporarily creates."

We perceive here a peculiar interaction between paid and unpaid labour.

"If the quantity of unpaid labour supplied by the working class and accumulated by the capitalist class increases so rapidly that its conversion into capital requires an extraordinary addition of paid labour, then wages rise, and, all other circumstances remaining equal, the unpaid labour diminishes in proportion. But as soon as this diminution touches the point at which the surplus labour that nourishes capital is no longer supplied in normal quantity, a reaction sets in; a smaller part of revenue is capitalized, accumulation lags, and the movement of rise in wages receives a check. The rise of wages therefore is confined within limits that not only leave intact the foundations of the capitalistic system, but also secure its reproduction on a progressive scale."

The fluctuations in the accumulation of capital, which keep wages within certain limits, appear to the bourgeois economists as fluctuations in the number of wage-workers offering their services. They therefore labour under a delusion similar to that which besets the people who believe that the sun moves round the earth while the latter stands still. Marx says:

"Thus, when the industrial cycle is in the phase of crisis, a general fall in the price of commodities is expressed as a rise in the value of money, and, in the phase of prosperity, a general rise in the price of commodities, as a fall in the value of money. The so-called currency school concludes from this that with high prices too little, with low prices too much money is in circulation. Their ignorance and complete misunderstanding of facts are worthily paralleled by the economists, who interpret the above phenomena of accumulation by saying that there are now too few, now too many wage labourers."

If the accumulation of capital slackens, it gives the appearance that the labouring population is growing quicker than usual; if the former proceeds at a more

rapid pace, it appears as if the working population is decreasing or grows more slowly than usual. In reality, as most of our readers may be aware, the phenomenon that wages fluctuate without being ever able to overstep certain limits is responsible for the so-called "iron law of wages"; that is to say, a rise in wages results in a rapid increase of the working population, and the augmented supply of labour depresses wages, while a fall in wages brings about greater poverty and higher mortality among the working class, which diminishes the supply of labour-power, and thus causes wages to rise again.

This contention is contradicted by the simple fact that, as every one knows, wages fluctuate within much shorter periods than from generation to generation. We shall return to this point later.

(2) *The Industrial Reserve Army*

So far we have assumed that accumulation proceeds without any changes in the composition of capital. But such changes necessarily take place from time to time in the course of accumulation.

The technical composition of capital is affected by every alteration in the productivity of labour. Other circumstances remaining equal, the mass of the means of production which a worker converts into products increases with the productivity of his labour. The quantity of raw materials which he transforms grows, as does also the number of instruments of labour which he employs. With the productivity of labour, therefore, grows the quantity of the means of production in proportion to the labour-power incorporated in them, or, what comes to the same thing, the amount of labour employed declines in relation to the means of production which it sets in motion.

This alteration in the technical composition of capital

is reflected in its value composition. It appears here as a relative decrease in the variable and increase in the constant portion of capital. The changes in the value composition of capital, however, do not exactly correspond to the changes in its technical composition, as with the growth in the productivity of labour, an increase in the mass of the means of production which it utilises is accompanied by a fall in their value, although this fall is not directly proportionate to their quantitative increase. At the beginning of the nineteenth century, for example, the capital-value employed in spinning was one-half constant and one-half variable. The quantity of raw materials, instruments of labour and so on which a spinner to-day uses up with the same expenditure of labour is many hundred times greater than formerly ; the value relation between constant and variable capital has, however, altered much less ; the ratio of constant to variable capital in spinning is now perhaps as seven to one.

But in any case the growth in the productivity of labour signifies, under the capitalist mode of production, a relative decrease of variable capital.

The productivity of labour and the accumulation of capital, however, are closely correlated with each other.

It is a condition of commodity production that the means of production are private property. But the development of the social productivity of labour presupposes co-operation on a large scale, ample working accommodation, great quantities of raw materials and instruments of labour and so on. Now the ownership of such gigantic means of production by individuals is only possible under the *régime* of commodity production provided individual capitals have been accumulated to a sufficient extent. " The basis of the production of commodities can admit of production on a large scale in the capitalistic form alone." A certain level of accumulation of capital is there-

fore a prerequisite for a certain level of the productivity of labour. But under the capitalist mode of production, every method for raising the productivity of labour becomes a method for the augmented production of surplus-value, and thereby facilitates an increase in accumulation. The latter, in its turn, effects an extension in the scale of production, which again is the most powerful incentive to a further heightening of the productivity of labour. The accumulation of capital and the productivity of labour, therefore, continuously assist each other by action and reaction.

The influence of the growth of individual capitals through accumulation is counteracted by the simultaneous division of old capitals, as for example, through the division of inheritances, and the disengaging of new independent capitals. This tendency to neutralise accumulation is, however, more than overcome by centralisation, the unification of capitals already in existence, which is more particularly brought about by the absorption of small capitals by large capitals. This centralisation effects an increase in productivity, a change in the technical composition of capital just as accumulation does. On the other hand, accumulation promotes centralisation, and contrariwise. The larger the capital I have accumulated, the easier it is to compete with and absorb the small capitals. The more small capitals my capital has absorbed, the greater the productivity of the labour which it keeps employed, and the more extensive is the accumulation.

The concentration of gigantic masses of capital within a few hands does not merely develop productivity in the branches of labour that are already dominated by the capitalist mode of production. A number of small capitals, ousted from the large branches of industries, are forced into branches of labour in which capitalist methods have not yet gained a firm footing, in which a small capital is

still able to compete, and thus prepare the ground for the incorporation of even this branch of industry into the domain of capitalism.

Thus we see the capitalist mode of production is in a constant state of technical revolution, the consequences of which are the progressive augmentation of constant capital and the relative diminution of variable capital.

And the relative decline of variable capital proceeds considerably faster than accumulation. The capital that is newly formed in the course of accumulation employs an ever smaller number of additional workers in relation to its magnitude. Simultaneously with accumulation, however, there proceeds the revolutionising of the old capital. If a machine is worn out, it is not replaced by a similar machine, assuming that technical progress has taken place in the meantime, but by an improved machine, the employment of which will enable a worker to supply more products than formerly. The old capital is produced anew in an increasingly productive form; in consequence of which more workers are dismissed.

Centralisation is one of the most powerful levers for this transformation of old capital.

The quicker the centralisation and technical revolution of old capital proceed, the more the accumulation of new capital must be accelerated, if the number of workers employed is not to decline. But the quicker accumulation proceeds, the greater is the impulse given to centralisation and technical revolution.

The Malthusians tell us that "over-population" is due to the fact that the means of life (or, more strictly speaking, the variable capital) grows in arithmetical progression, in the ratio of 1 : 2 : 3 : 4 : 5, and so on, whereas the tendency of population is to increase in geometrical progression, as 1 : 2 : 4 : 8 : 16, and so on. The increase of population is therefore always in advance of the increase of the

means of life, with the natural consequences of vices and poverty.

But what really advances progressively is the decline in variable capital simultaneously with the growth of the total capital. If it was originally one half of the total capital, variable capital progressively becomes only $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, and so on of the total capital.

"This accelerated relative diminution of the variable constituent, that goes along with the accelerated increase of the total capital, and moves more rapidly than this increase, takes the inverse form, at the other pole, of an apparently absolute increase of the labouring population, an increase always moving more rapidly than that of the variable capital or the means of employment. But, in fact, it is the capitalistic accumulation itself that constantly produces, and produces in the direct ratio of its own energy and extent, a relatively redundant population of labourers, *i.e.*, a population of greater extent than suffices for the average needs of the self-expansion of capital, and therefore a surplus population."

The change in the composition of the total social capital does not proceed uniformly in all its parts. In one case capital grows through accumulation, but the latter does not immediately alter the existing technical foundation, and therefore absorbs additional labour-power in proportion to its growth. In another case the composition of capital changes without any increase in its absolute magnitude, merely through the increment of old capital in a more productive form—and the number of workers employed falls both relatively and absolutely. Between these two extreme cases innumerable combinations are interposed, determined by the interactions of accumulation, centralisation, and the transformation of old capital into a more productive form, all of which cause either the direct dismissal of workers, "or the less evident, but not

less real, form of the more difficult absorption of the additional labouring population through the usual channels."

The working population is thus kept in a constant state of fluidity, here absorbed, there ejected, and this movement becomes all the more violent the quicker the change in the composition of capital, the greater the productivity of labour, and the more massive the accumulation of capital.

Marx quotes statistics from the English Census to prove the relative and frequently absolute decline in the number of employed workers in numerous branches of industry. From more modern statistics we extract the following two examples of an absolute decrease in the number of workers employed simultaneously with an expansion of production.

The first example shows us the British cotton industry in the period between 1861 and 1871.

No. of	1861.	1871.
Factories . . .	2,887	2,483
Spindles . . .	30,387,467	34,695,221
Steam looms . .	399,992	440,676
Workers . . .	456,646	450,087

We see that simultaneously with the decline in the number of workers employed, there has been a decline in the number of factories and an increase in the number of spindles and machine looms; indications of a centralisation and accumulation of capital.

From 1895 to 1904 the consumption of cotton in England increased from 1,550 millions of pounds to 1,700 millions, while at the same time the number of workers in the cotton factories decreased from 539,000 to 523,000.

A similar picture is presented by many branches of the German textile industry: a substantial decrease in the

number of workers, which is, however, restricted to small-scale business. The large undertakings and their workers increase—thus there is a strong centralisation and accumulation of capital, with a simultaneous setting free of workers. We find, for example, in the German silk weaving industry:

Year.	Small Business up to 5 Workers.		Medium Business 6 to 50 Workers.		Large Business over 50 Workers.	
	No. of Concerns.	No. of Workers.	No. of Concerns.	No. of Workers.	No. of Concerns.	No. of Workers.
1882	39,500	57,782	412	4,902	69	13,580
1895	16,527	20,484	192	3,469	140	32,129
1907	8,272	12,823	346	5,650	240	48,719
Increase + or decrease −	−31,228	−44,959	−66	+748	+171	+35,139
Similarly in linen weaving.						
1882	71,916	91,039	404	5,226	73	7,543
1895	34,082	43,228	291	4,598	120	19,966
1907	14,275	18,949	265	5,214	180	28,177
Increase + or decrease −	−57,640	−72,090	−139	− 12	+107	+20,634

The number of workers in silk weaving and linen weaving together decreased by 60,540 during 25 years, but the decline was wholly due to the decay of the small-scale businesses, the numbers of which, in both branches of production, decreased by 88,868, or 80 per cent., whereas the number of workers employed therein fell by 116,959. On the other hand, the large-scale businesses increased from 142 to 420, or almost trebled, and the number of

workers employed therein increased from 21,123 to 76,896, or more than trebled.

We have hitherto assumed that the increase or decrease of variable capital exactly corresponds to an increase or decrease in the number of workers employed. This, however, is not always the case. If the manufacturer prolongs labour-time, while the price of labour remains unaltered, he will pay out more wages; the variable capital will grow, without necessarily involving the employment of more workers, whose numbers may even fall at the same time.

Let us assume that an employer employs 1,000 workers, the working day amounts to 10 hours, and the daily wage 2*s*. He proposes to invest additional capital in his business. He could do this by extending the business accommodation, procuring new machines and engaging more workers. But he could also employ the additional capital, so far as it is not required to obtain further raw material, by prolonging the labour-time of the workers already employed. Let us suppose he prolongs it by 5 hours; the price of labour remains the same; the daily wage will then amount to 3*s*.; and, other circumstances remaining equal, the variable capital will be increased by 50 per cent., while the number of workers will remain unchanged. It is, however, to the interest of every capitalist to effect an increase of work rather by the prolongation of labour-time or the augmentation of the intensity of labour than by increasing the number of workers, as the amount of constant capital which he has to expend grows much more slowly in the former case than in the latter. And this interest is all the stronger the larger the scale of production. Its force increases therefore with the accumulation of capital.

If, for example, the worker's instrument of labour is a spade, which costs 2*s*., the employer would hardly offer

any resistance to increasing output through a corresponding increase in the number of workers. The case is different when the worker operates machinery which costs £5,000.

But the accumulation of capital is not only accompanied by the efforts of the capitalists to obtain an increase in output without a corresponding increase in the number of workers; there is also a diminution in the strength of the working class to offer resistance to this tendency. The redundant workers produced in consequence of the accumulation of capital diminish, by their competition, the power of resistance of the employed workers. The latter are thus compelled to submit to work overtime; the working overtime again swells the ranks of the redundant labouring population. The unemployment of the one determines the overwork of the other, and *vice versâ*.

We see that the accumulation of capital, with its concomitants and consequences, the centralisation of capitals, the technical transformation of old capitals, overwork, and so on, has the tendency to diminish sometimes even absolutely the number of employed workers in relation to the total amount of capital engaged.

But at the same time it increases the number of workers offering their services and remaining at the disposal of capital to an extent that goes far beyond that of the increase of population generally.

In the second part of this book we have seen how manufacture and even more modern industry, in the course of their development, make use of unskilled labour-power in place of skilled; the apprenticeship of the worker shrinks to a minimum, the worker is the sooner placed in a position to be employed by capital, the period of his reproduction is shortened. At the same time adult male labour is supplanted in many branches of labour by women and children. Not only does this directly increase the labour army to an enormous extent, but it results in the economic

independence of girls and young people, causes them to work together, creates the possibility of the children contributing to the family support in their early years, encourages early marriages, and likewise shortens the period of reproduction for the working class.

A further powerful cause of the rapid swelling of the labour army comes into operation as soon as the capitalist mode of production dominates agriculture. Here the increase in productivity results as a matter of course, not merely in a relative, but in an absolute decline in the number of employed workers. In Great Britain the number of workers engaged in agriculture in 1861 amounted to 2,210,449; in 1871 only to 1,514,601, a decrease of almost 700,000. The workers who are made redundant are attracted to the industrial districts, so far as they do not emigrate, and there swell the ranks of the labour army offering its services to the capitalist.

Lastly, we must not forget the effect of railways and steam ships, which render it possible for capital to draw new masses of workers from industrially-backward countries—Ireland, Poland, Slovakia, Italy, China, etc.

Thus the working population increases with uncommon speed, quicker than the need of capital for employable labour-power, and the consequence is a relative over-population, which, as we have seen, is created by the accumulation of capital; not by the decline in the productivity of labour, as economists asserted, but by the growth in its productivity.

The existence of so-called over-population, the existence of an industrial reserve army, does not, however, impede the development of capital, but at a certain stage forms one of its preliminary conditions.

As we know, capital is an elastic magnitude. The more the capitalist mode of production develops, the more violent and comprehensive will be its periodical expansions

and contractions. As was indicated in the second part, modern large-scale industry moves within a cycle which is peculiar to itself, which until 1873 repeated itself in periods of about ten years; a jog-trot progress of business quickly develops into a gallop; a trade boom sets in; there is a sudden colossal extension of production, a fever of production—then the crash, the deflation of business life, until the market correspondingly extends and has absorbed the superfluity of products, whereupon a period of recuperation supervenes, and the old game begins again on an extended scale.

Thus it was when Marx composed his "Capital," which first appeared in the year 1867. Thus it was when he wrote the preface to the second edition of his "Capital" (on the 24th January, 1873), in which he declared that the general crisis was on the march.

We all know how soon and how exactly this prophesy was verified.

But with the crisis which began in 1873, the capitalist mode of production seemed to have entered upon a new phase. Whereas up till then the productivity of modern industry developed so rapidly that at times it grew more quickly than the extension of the world market, it seemed now that, in consequence of the colossal progress of technology and the enormous extension of the dominion of capitalist production—to Russia, America, East Indies, Australia—the time had come when the world market would only exceptionally and temporarily be able to absorb the products of world industry; instead of a cycle of ten years, of which the successive phases were moderate activity of economic life, feverish energy of production, crash, deflation, revival, since 1873 we had chronic business stagnation and permanent depression in the economic sphere, which was only interrupted in 1889 by an improvement of trade, a brief flaring up of the spirit of specula-

tion, which was soon over, giving place to a still more severe depression in economic life. It seemed as if a big trade boom would never come again.

This assumption was, however, erroneous. From 1895 to 1900 we had again a period of economic prosperity, which was of such dimensions that it led not a few optimists to the opposite assumption, viz., that the period of crises had passed away.

This assumption was from the outset untenable, as an economic boom under the capitalist mode of production must necessarily end in a crisis, which in the case in point promptly enough supervened.

In this connection, however, we are only concerned with the temporary expansions and contractions of capital, which take place during the chronic business depression, just as they did in the decennial cycle of crisis and economic boom.

Such a periodical expansion of capital creates a great need for labour-power. How is it met ? Wages rise, and, according to the theory of the economists, this brings about an increase of population—after twenty years the working class will have become numerous enough to enable capital to exploit the boom. But each time the boom lasts only a few years, often only a few months ! Fortunately for capital, the state of affairs is in reality different from that according to the " iron law of wages." As we have seen, the capitalist mode of production artificially creates a redundant working population ; and this is the reserve army, from which capital at any moment can take as many additional workers as it requires ; without it the peculiarly jumpy development of capitalist large industry would be impossible. Where would German industry have been, if at the beginning of the 'seventies and likewise in the middle of the 'nineties it had not found so many hands which were " free " and at its ser-

vice, whole reserve armies, which could be flung on the railways, in new coal mines, smelting furnaces and so on ? This reserve army not only renders possible the sudden expansion of capital ; it also exerts a pressure on wages, and as it can hardly be entirely absorbed when business is most flourishing, it has the tendency to prevent wages from exceeding a certain level in times of greatest activity in production.

What appears as fluctuations in the number of the population is in reality only the reflection of the periodical expansion and contraction. When the Malthusians exhort the workers to regulate the increase in their numbers according to amount of employment that exists, it means that they should adapt their numbers to the temporary requirements of capital.

Malthusianism is based on a confusion of capital's very changeable production requirements with the productive powers of the existing means of production ; the absurdity of this confusion has been most apparent during the last two decades. On the countryside of Europe there has been over-population in consequence of superfluity of the means of life, over-population in consequence of the competition of American, Indian, and Australian meat and cotton.

Absurd as this sounds, the demands of Malthusianism are only the corresponding expression of the position which the worker to-day occupies towards capital : he is only an appendage of capital ; during the process of production he does not employ, but is employed by, the means of production ; moreover, after the working-day he also belongs to capital, as we have seen ; if he consumes, if he maintains and propagates himself, he has to do so in a manner that best corresponds to the interests of capital. The worker is subjugated by his own product, which enlists in its service not only his labour-power, but all the activities of his personality.

CHAPTER VI

THE DAWN OF THE CAPITALIST MODE OF PRODUCTION

In the last paragraphs of the preceding chapter we have seen how capital constantly creates anew its preliminary conditions. But it is obvious that capital in its classic form could not be constituted until these preliminary conditions had been developed to a certain extent. What conditions brought them into existence is a question which we have not yet answered. In our investigation into the conversion of money into capital, we proceeded upon the assumption that, on the one hand, large sums of money existed in the possession of private persons, and, on the other hand, labour-power was offering itself as a commodity in the market. How labour-power became a commodity, what caused the accumulation of these sums of money, we left uninvestigated.

It remains for us to indicate the most essential facts pertaining to this subject.

The accumulation of capital signifies the renewal of the preliminary condition for capital. The original formation of the preliminary condition for capital, which preceded its development, is called by Marx primitive accumulation.

To the question as to the origin of capital, the economists give us the same answer, which they always have ready when they do not know or do not want to know the actual conditions: a Robinson fable. Such an answer possesses the double advantage, that no preliminary

knowledge is needed for its invention, and that it can always be devised so as to prove all that is required.

And those Robinson fables, which aim at explaining the origin of capital and bringing it into harmony with current ideas of right, are among the most insipid stories of their kind. They differ from the stories of our childhood only through their tediousness.

Listen to Roscher, for instance: "Let us imagine a fishing people without private property in land and capital, dwelling naked in caves, and living on the sea fish which, stranded on the shore after the ebb of the tide, are caught with the mere hand. All workers may here be equal, and may daily both catch and consume three fish. Now a wise man restricts his consumption to 2 fish for 100 days, and utilises the provision of 100 fish collected in this manner to expend his whole labour-power for 50 days in the making of a boat and fishing net. With the help of this capital, he catches henceforth 30 fish daily." All these stories of the origin of capital smell of similar rotten fish.

It is always the old story of the brave, industrious, and temperate worker who became a capitalist, and of the good-for-nothing loafer who dissipated his all, and as a punishment therefore is condemned, with his children and children's children, to toil in the sweat of the brow for the industrious and their descendants to all eternity.

Primitive accumulation wears a different aspect if we study the history of Europe from the fourteenth century. It presents two sides, only one of which has become familiar in popular circles through the liberal historical school.

Industrial capital could not arise without free workers, workers who stood in no relation of servitude, or attachment, or guild compulsion. It required the freedom of production in place of the fetters of feudalism, it had to emancipate itself from the tutelage of the feudal lords.

From this standpoint, the struggle of aspiring capitalism appears as a struggle against compulsion and privileges, as a struggle for freedom and equality.

It is this side which is always emphasised by the literary advocates of the bourgeoisie. We have no intention of belittling the importance of this struggle, all the less so now that the bourgeoisie is beginning to deny its own past. But in contemplating this proud and brilliant side of history, the reverse side should not be forgotten; the creation of the proletariat and of capital itself. In his "Capital," Marx thoroughly investigated this side as regards one country: England, the motherland of the capitalist mode of production, the sole country in which the primitive accumulation took place in its classic form. A few indications of the relative conditions will be found in the "Poverty of Philosophy" (Chapter II.).

Unfortunately the corresponding development in Germany cannot be clearly traced, as it was impeded and distorted by the alteration of the trade route to the East from the Mediterranean Sea to the Atlantic Ocean, and then through the Thirty Years' War and the century long exclusion of Germany from the world market.

The greatest obstacle which nascent capital encountered was, apart from the guild organisation in the towns, the common property in the soil of the village communes—sometimes of larger co-operative associations. As long as this existed, there were no masses of proletarians. Luckily for capital, the feudal nobility was looking after its business. Since the crusades, trade and commodity production had been developing more and more. New needs for commodities were arising, which urban industry or urban merchants supplied for money. But the wealth of the feudal noble was based on the personal services or the contributions in kind of the dependent peasants. With him money was scarce. He tried to steal what he

could not buy. Nevertheless, the State power became stronger and stronger. The feudal levies of the lower noble were confronted by the hired soldiers of the towns and the princes. Waylaying became impossible. The feudal lords attempted to extort money and goods from the peasants, and thereby drove them to desperation—witness the peasant wars—without gaining anything very important for themselves. Thus eventually the feudal lords gradually resolved to share in the new enjoyments, to become commodity producers like the townsmen, and to obtain money by producing agricultural products like wool, corn and so on for sale and not merely for their own consumption as hitherto.

This necessitated the extension of their agricultural business, the management of which was transferred to inspectors, intendants, or tenants, an extension which was only possible at the expense of the peasantry. The peasants transformed into serfs could now be detached, that is, driven from their native places, and their holdings could be united with the territory cultivated by the landlord. The common property of the villages, over which the feudal lords had the over-lordship, was transformed into the private property of the latter, and the peasant was thereby economically ruined.

An agricultural commodity in particular request was wool, which was needed by the urban textile industry. But the extension of wool production signified the conversion of arable land into pasture land for sheep and the expulsion of numerous peasants from their holdings, by legal or illegal methods, by economic means or direct physical force.

In the same degree that the urban textile industry grew, the number of peasants expropriated and bereft of property also increased.

In addition, the noble disbanded his numerous retinue,

which under the new conditions was not a source of power, but a cause of financial weakness, and eventually the influence of the Reformation was also favourable to capital, as not only were the inhabitants of the cloisters turned into proletarians, but the Church property was surrendered to speculators, who ejected the old, hereditary vassals.

By such means a large portion of the country population was divorced from the land, from their means of production, thereby creating that artificial "over-population," that army of propertyless proletarians, who are obliged from day to day to sell their labour-power, which capital requires.

It was the feudal lords who in this way prepared the ground for capital, who supplied proletarians to agricultural as well as to urban capital, and at the same time left the field clear for country commodity production on a large scale, for capitalistic agriculture. The capitalistic character which agriculture has since borne in connection with large estates was not effaced, but only distorted, through the servitude which adhered to it.

It is so much the more comical when the great landlords to-day masquerade as that class which is fitted by Nature to be the protector of the worker from capital, and to be the restorer of harmony between the two.

A general vagabondage prevailed in Europe in the fifteenth and sixteenth centuries as a consequence of the numerous expropriations of the peasantry. It threatened to overwhelm society, which endeavoured to protect itself therefrom by punishments of horrible cruelty, with whippings, brandings, cutting-off ears, and even with death.

Whilst, however, more workers were set free than capital could absorb, the supply of employable workers often remained short of the needs of capital. So long as the capitalist mode of production was still in the period

of manufactures, it was dependent upon workers who had acquired a certain degree of skill in their detail operations. It was often years before such workers could acquire the necessary skill. The variable element of capital then predominated considerably over its constant element. Consequently, the demand for wage labour grew rapidly with every accumulation of capital, while the influx of employable wage labour proceeded but slowly. Moreover, the skilled workers were not only relatively rare and much sought after, but the traditions of handicraft were still very much alive in them. The journeyman was on a social level very near that of the master, and might even hope to become a master. The wage workers had self confidence, were proud and refractory; they could and would not submit to the discipline and eternal routine of capitalist industry. A " higher power " had to intervene, in order to create docile workers for capital.

Just as it did for the protection of property from vagabonds, or for promoting the transformation of common property into private property (which Marx exhibited in detail as far as England was concerned), so the State power also intervened when it was a question of habituating the workers to capitalist discipline. Strict ordinances fixed the maximum of wages, extended the working-day, and prohibited labour combinations.

How much all this corresponded to the spirit of the bourgeoisie then fighting for " freedom " was shown by the latter when it captured political power in the French Revolution; it then waged an embittered war against the vestiges of common property in land which had still survived in France, and strictly prohibited labour associations.

With the proletariat, however, capital found its home market. Formerly every peasant family itself produced what it needed, food and the products of domestic industry.

Now it was otherwise. Food was now grown as a commodity on the large estates, which consisted of the communal property and the individual peasant holdings thrown together, and found its market in the industrial districts. The products of capitalistic industry—at this period those of manufacture—found a market among the wage workers engaged in industry and on the large estates, and among the peasants themselves. Frequently their plots of land became too small to sustain them, agriculture became a subsidiary employment for them, domestic industry for the purpose of home consumption was supplanted by a domestic industry which produced commodities for the capitalists, for the merchants ; one of the most horrible, but profitable forms of capitalist exploitation.

We have seen how the proletariat and artificial over-population were created, rendering possible the capitalist mode of production, which, on its part, reproduces the proletariat and the relative over-population on an ever increasing scale.

Whence, however, came the wealth centred in a few hands which was a further preliminary condition for the capitalist mode of production ?

The Middle Ages took over from Antiquity two kinds of capital : usurer's capital and merchant's capital. Since the Crusades the commerce with the East had grown enormously, and with it merchant's capital and its concentration within a few hands—we need only mention the Augsburg firm of Fugger, the German Rothschild of the fifteenth and sixteenth centuries.

Usury and trade, however, were not the only sources from which the sums of money flowed, which after the fifteenth century were to be transformed to an ever-increasing extent into industrial capital. Marx has described in " Capital " the other sources thereof. We refer the

reader for details to this exposition, which forms a worthy conclusion to the brilliant historical treatise upon "the primitive accumulation." Here we shall only reproduce in Marx's own pregnant words a short summary of the various methods of this accumulation:

"The discovery of gold and silver in America, the extirpation, enslavement and entombment in mines of the aboriginal population, the beginning of the conquest and looting of the East Indies, the turning of Africa into a warren for the commercial hunting of black-skins, signalised the rosy dawn of the era of capitalist production. These idyllic proceedings are the chief momenta of primitive accumulation. On their heels treads the commercial war of the European nations, with the globe for a theatre. It begins with the revolt of the Netherlands from Spain, assumes giant dimensions in England's anti-jacobin war, and is still going on in the opium wars against China, etc.

"The different momenta of primitive accumulation distribute themselves now more or less in chronological order, particularly over Spain, Portugal, Holland, France, and England. In England at the end of the seventeenth century, they arrive at a systematical combination, embracing the colonies, the national debt, the modern mode of taxation, and the protectionist system. But they all employ the power of the State, the concentrated and organized force of society, to hasten, hothouse fashion, the process of transformation of the feudal mode of production into the capitalist mode, and to shorten the transition. Force is the midwife of every old society pregnant with a new one. It is itself an economic power."

The penultimate sentence of the passage quoted is very often cited, but generally torn from its context. Its interpretation is plain enough when it is considered in connection with what precedes it. Among the forces which served as the midwife of the capitalist mode of production was "the State power, the concentrated and organised power of society," certainly not the power of the "State

as such," which is enthroned in the clouds above the class antagonisms, but the power of the State as the tool of a powerful and aspiring class.

The increasing proletarisation of the population, especially the peasantry, and the creation of the home market, on the one hand, and on the other, the accumulation and concentration of great wealth, and simultaneously, the creation of the foreign market, especially in consequence of the commercial wars and colonial policy—these were the preliminary conditions which, after the fifteenth century in Western Europe, combined to transform the whole of production more and more into commodity production, and simple commodity production into capitalist production. The scattered small businesses of the peasants and handicraftsmen were henceforth gradually destroyed and supplanted by large scale capitalist concerns.

CHAPTER VII

THE UPSHOT OF THE CAPITALIST MODE OF PRODUCTION

We have reached the end of the exposition of the capitalist mode of production, which we have investigated in the footsteps of Karl Marx.

We have seen that the primitive mode of production was based on and conditioned by social, systematically-organised labour, that both the means of production and the products were social property. To be sure the products were distributed, and thus became individual property, but only so far as they were useful objects for individuals. As the immediate result of social labour, the products were primarily the property of society.

This mode of production was supplanted by the simple commodity production of private workers, working independently of each other, each of whom created products with means of production which belonged to himself, and it goes without saying that these products were then his private property.

But from simple commodity production there developed capitalist commodity production. The individual workers producing independently of each other were replaced by large, concentrated workplaces. While each of these was producing commodities independently of the other, it was organised internally for systematic, social production. As these great capitalist businesses confronted each other as commodity producers, their reciprocal intercourse perpetuated commodity production and therefore the property

rights of simple commodity production, that is, private property in the means of production and the products.

But with this private property is twisted into its contrary.

Under simple commodity production private property was the result and fruit of labour. The worker was the owner of his means of production and of his products. Capitalist production broke down the connection between labour and property. The worker had no longer any property in his product. On the contrary, both the means of production and the products belonged to the non-worker. The transformation of production into a social process upon a capitalist foundation increasingly transformed the non-worker into the owner of all wealth, and the worker into a propertyless person.

This does not quite exhaust the contradiction between the prevailing mode of production and the prevailing mode of appropriation.

We have seen how simply and transparently production was carried on under primitive communism, how society adjusted it to its desires and needs.

Under the system of commodity production, the social conditions of production become a power that overshadows the individual producer. The latter becomes its abject slave, and his position becomes the more miserable as the new masters do not prescribe his duties, do not intimate to him their needs, but leave him to guess them. Production was now subject to laws, which operated like natural laws independently of the producers and frequently against their wills; laws which asserted themselves through the periodical intervention of abnormal conditions, like a fall in prices, dearness, etc.

Now under the *régime* of simple commodity production, these abnormalities, so far as they sprang from social causes, remained insignificant and restricted to a narrow

sphere, corresponding to the lower productivity of the scattered businesses of the individual workers.

Thereafter the productivity of labour was enormously increased by the capitalist mode of production, which unchained and carried to the highest pitch all those productive forces which are marked by social, deliberately-organised labour, which enlist in their service the natural forces subjugated by science. The consequence is that the periodical intervention of abnormal conditions, by means of which the laws of commodity production assert themselves, which formerly only caused temporary and local inconveniences, easily got over and often obviated, have now become periodical catastrophes lasting for years, growing in extent and intensity with the capitalist mode of production, and seeming to have settled into the position of a chronic plague.

Yet another fact. Under primitive communism, where the product of social labour belongs to society, by whom it was distributed among the individuals according to their needs, the share of each grew with every increase in the productivity of labour.

Under the rule of commodity production, the quantity of use-values, which correspond to a definite magnitude of value, grows with the productivity of labour. Under simple commodity production, the product of his labour belongs as a rule to the worker. He may consume it himself, either wholly or in part.

In this case the quantity of use-values at his disposal manifestly grows in the same degree as the productiveness of his labour. But he may also exchange the product of his labour, either wholly or in part—only a small portion of the product becomes a commodity under simple commodity production.

He will receive all the more use-values in exchange for the product of a special kind of labour, the greater the

productivity of labour in general. Here also the worker alone benefits from the growth in the productiveness of labour.

Under capitalist commodity production, labour-power itself is a commodity, whose value like that of any other commodity falls as the productivity of labour rises. The greater, therefore, the productivity of labour, the less is the relative share in its advantages which the worker receives in the price of labour-power. But the more the capitalist mode of production gains the upper hand, the more the mass of the people consists of wage-workers, and the more, therefore, they are excluded from the fruits of the augmented productivity of their labour.

All these antagonisms necessarily give rise to conflicts between the capitalist class and the workers, conflicts which arouse the latter to class-consciousness, impel them to engage in political activity, and bring labour parties into existence in all capitalist countries. But the circumstances above indicated also create sufferings of the most varied kinds, and not merely those which are confined to the working class, sufferings which cause more and more people outside the class of wage-workers to regard the existing conditions as intolerable.

Thus everything presses for a solution of the contradiction, which is embodied in the capitalist mode of production, the contradiction between the social character of labour and the traditional form of appropriating the means of production and the products.

Only two methods of solving it seem possible ; both aim at bringing the mode of production and the mode of appropriation into harmony. The one way points to the abolition of the social character of labour, to a return to simple commodity production, to replacing large-scale industry by handicraft and small peasant agriculture. The other method does not attempt to adapt production to the

mode of appropriation, but aims at adapting the mode of appropriation to production, it points to social property in the means of production and the products.

There are many to-day who attempt to deflect the course of development into the first direction; they proceed from the erroneous assumption that the mode of production can be shaped at will by legal enactments. This attempt is condemned by bourgeois vulgar economists, the advocates of capital.

But they themselves try to play a similar game. In order to make it appear that the prevailing mode of production is in harmony with the prevailing mode of appropriation, they ignore the peculiar and essential characteristics of the modern mode of production in their economic expositions, and represent the latter as if it were simple commodity production; it is only necessary to peruse the accessible writings of vulgar economy; there commodities are to-day exchanged as they were among barbarians, there hunters and fishers, who have free access to the forests and the sea, figure as wage-workers, and bows and arrows, boats and nets, as capital.

The illusions which these gentry seek to evoke are dissipated in the colonies, that is, in countries with virgin soil which are colonised by emigrants. There we find complete freedom of the labour contract, the property of the worker in his products, and therefore in the fruits of his labour. We find there the general conditions which our economists represent as those of the capitalist mode of production: but strange to say, capital ceases under these conditions to be capital. In such colonies free land still exists in abundance, and access thereto is open to all. Every worker, as a rule, may produce there independently; he is not obliged to sell his labour-power. Consequently, each prefers to work for himself instead of for another. Money, means of life, machines, and other

instruments of production, therefore, cease to be capital. They do not breed value.

The same economists who declaim so pathetically about the sanctity of property and the freedom of the labour contract put forward demands in young colonies, with a view to permitting capital to thrive, for the exclusion of the workers from landed property and the promotion of their emigration by the State, at the expense of those workers who are already there, in other words, the forcible separation of the worker from the means of production and of life, and the artificial creation of a redundant working population, which is in fact not free, but obliged to sell its labour-power. And where a docile working class—especially belonging to a backward race—is in existence, unvarnished compulsory labour, or slavery, is proclaimed.

"The same interest, which compels the sycophant of capital, the political economist, in the mother country, to proclaim the theoretical identity of the capitalist mode of production with its contrary, that same interest compels him in the colonies to make a clean breast of it, and to proclaim aloud the antagonism of the two modes of production."

The handiwork of this species of economists has been drastically exposed by Marx in his "Capital." But his work has accomplished more than merely to expose the vulgar economists in all their mediocrity and inaccuracy.

People are fond of describing Marx as a mind which always denied, which only dissolved by criticism, but was never able to work constructively. Yet the present sketch of the exposition of the production-process of capital which Marx has given us suffices to show that he actually created a new economic and historical system. The criticism of his predecessors only formed the foundation of this system.

In the act of overcoming the old, one climbs to a higher standpoint, and one cannot criticise without acquiring a deeper insight; one cannot pull down any scientific system without erecting behind it another and more comprehensive system.

Marx was the first thinker who revealed the fetishistic character of the commodity, who recognised capital not as a thing, but as a relationship between things, and as a historical category. He was the first who investigated the laws of movement and of the development of capital. And he was the first who deduced the aims of the present-day social movement as a necessary consequence from the anterior historical development, instead of excogitating them out of his inner consciousness as the dictates of some "eternal justice."

From the standpoint to which Marx has raised us, we can not only perceive that all the attempts of the vulgar economists to transmogrify the existing conditions into patriarchal conditions are as vain as the attempts to reverse the course of development. We can also perceive the sole path that is left for the further development of society: the adaptation of the form of appropriation to the mode of production, the assumption by society of ownership of the means of production, the complete and unreserved accomplishment of the transformation, which has only been half carried out by capital, of production from isolated production into social production. With this, however, a new epoch opens for mankind.

Anarchical commodity production is replaced by the deliberate systematic organisation of social production, and an end is made of the domination of the producers by the product. Man, who has become to an ever increasing extent the master of natural forces, will thereby become the master of social development. "Only from that time will man himself, more and more consciously make his own

history," says Engels, " only from that time will the soc causes set in movement by him have, in the main and i constantly growing measure, the results intended by hi It is the ascent of man from the kingdom of necessity the kingdom of freedo ."

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